

**THE
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News

The Railway Times • Herapaths
Railway Journal

RAILWAYS • ESTABLISHED 1835

RAILWAY RECORD • THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY

AT

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:

British Isles and Abroad.....£2 5s. 0d.
Single Copies.....One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 75 No. 22

FRIDAY, NOVEMBER 28, 1941

CONTENTS

	PAGE
Editorials	545
Letters to the Editor	549
The Scrap Heap	550
Overseas Railway Affairs	551
New Stations at Rome	552
Road Transport Section	553
Junction Improvement on the Southern Railway	557
Dakar and the Trans-Saharan Railway	558
Railway News Section	561
Personal	561
Transport Services and the War	563
Stock Market and Table	572

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export

DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders No. 1190 of 1940, and No. 359 of 1941

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of existing subscribers who do not renew their subscriptions.

Annual subscriptions are payable in advance and subscribers are advised to pay their renewal accounts before the expiration of the existing subscription, as the despatch of copies will in all cases be stopped on expiration.

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

Paper Salvage and the Law

MOST readers of THE RAILWAY GAZETTE have long since been satisfied of the urgent necessity for salvaging the largest possible quantity of paper to assist the Government effort, and require no encouragement or injunction from ourselves. Our contribution towards the furtherance of this wastepaper salvage campaign must therefore take the form of helpful suggestion, and in this connection we have already called attention to the conflict of duty resulting from the natural hesitance of company secretaries to part with records. Generally speaking, railway and other statutory companies are in the particular position of being bound by the Companies Clauses Consolidation Act, 1845, which contains provisions with reference to the constitution of companies incorporated for carrying on undertakings of a public nature. Section 15 of this Act, for example, requires transfer deeds when duly executed to be "delivered to the secretary, and be kept by him." No time limit is specified, and the view is held that this may impose a liability on the company to keep them "for ever." Nevertheless, under the urge of present day needs, we understand that the four main-line railway companies have already decided to shorten very materially the period for the retention of many of their records, and that this will result in a very substantial contribution to the national salvage effort. No doubt S.R. & O. 1941, No. 1778, has assisted in overcoming the legal difficulties. It is not very clear whether this ruling of the Board of Trade, to which we referred editorially at page 517 of our last week's issue, covers statutory companies or only limited liability companies, but in any event we are sure that the commonsense attitude of the British railways will be generally applauded and would receive the support of the Government if ever queried. It is possible that similar legal points may arise in the minds of some of our readers, and, if ventilation in our columns would help towards their solution, we shall be glad to hear of them.

— — —

Overseas Trade after the War

In view of the exigencies of the times very little has been heard in recent months of the activities of the Department of Overseas Trade, but it is evident that that section of the Board of Trade is alive to the difficulties which industrialists in this country will have to face in overseas markets after the cessation of the war. It has been announced that Mr. John Rodgers has been appointed Director of Postwar Planning in the D.O.T. and that his new duties will be principally concerned with the factual investigation of the problems of United Kingdom trade after the war. Mr. Rodgers's first task will be to make a survey of what is happening now in relation to British exports, and subsequent planning will depend on the result of that survey. The vital need for the Government and industrialists in this country to bear in mind and to prepare for a resumption of export trade when the war comes to an end has been stressed frequently in these columns. There is no lack of experience in this country to show that markets which have once passed into other hands are extremely difficult to regain, and that no matter how great have been the virtues of British goods in the past these are apt to be forgotten when it is no longer possible to obtain them. It is for this reason that we have urged the necessity for keeping the names and qualities of British products before the eyes of potential overseas buyers even although for the time being it may not be possible to execute orders from abroad.

— — —

State Purchase of Indian Railways

The announcement that the Government of India has decided to exercise its option to determine the contracts of the Bengal & North Western and the Rohilkund & Kumaon Railway Companies on December 31, 1942, and thereafter to undertake their working, was not unexpected. Under the contracts the Government had the option of purchasing these railways either at the end of 1937 or at the end of 1942. Otherwise, the railways were to remain the property

of the companies until December 31, 1931, when they were to pass into Government ownership without payment except for rolling stock, equipment and stores, and certain capital expenditure. For financial reasons the Government was not willing to exercise its option for 1937. In November, 1936, it had asked the directors to discuss proposals for continuance of working by the companies for a brief but unspecified period beyond 1942 in return for an unstated but substantial payment by the companies starting at the end of 1937. The only terms indicated in informal suggestions were so onerous to the companies that the directors could not find in them any basis for discussion, and the matter was therefore dropped. These two companies are in the unique position among Class 1 railways in India in receiving no Government guarantee. All the net earnings of the Bengal & North Western's own lines belong to it, but the Government shares in the net earnings of the Rohilkund & Kumaon.

Overseas Railway Traffics

Increases in the traffic receipts of the British-owned railway companies in Argentina continued in the 19th and 20th weeks of the current financial year but at a much lower rate than in the two preceding weeks. Total increases of six companies in the fortnight amounted to 1,837,050 pesos, compared with 2,714,450 pesos in the 17th and 18th weeks. The fall in the rate of increase was most marked in the 20th week when the gains totalled only 613,550 pesos, against 1,223,500 pesos in the 19th week. On the Antofagasta Railway the receipts in the first 46 weeks of 1941 have reached £892,450, an improvement of £113,130. Central Uruguay earnings are £56,052 better for the 20 weeks of the financial year.

	No. of week	Weekly traffics	Inc. or decrease	Aggregate traffic	Inc. or decrease
Buenos Ayres & Pacific*	20th	1,350	+177	25,670	+3,288
Buenos Ayres Great Southern*	20th	2,095	+ 77	42,080	+4,489
Buenos Ayres Western*	20th	842	+ 79	16,440	+3,617
Central Argentine*	20th	1,557	+240	36,434	+8,736
		£	£	£	£
Canadian Pacific	45th	971,600	+287,800	37,910,400	+8,723,800
Bombay, Baroda & Central India	30th	309,450	+58,275	6,386,175	+483,075

* Traffic returns in thousands of pesos

United Havana receipts for the first 20 weeks of the current financial year amounted to £377,452, an increase of £74,300.

North-South Trans-Australian Link

From time to time during the 'eighties a scheme was under consideration for the construction of a railway to link the Australian Northern Territory seaboard with Adelaide and the Commonwealth railway system generally. So important was it considered that work was begun at both ends of a 3 ft. 6 in. gauge route from Darwin to Port Augusta before the end of that decade, and the section from Darwin to Pine Creek was opened on October 1, 1889, and that from Port Augusta to Oodnadatta on January 7, 1891. The map on page 553 will be of assistance in connection with this matter. No further construction was completed until an extension from Pine Creek to a point known as Emungalan was opened on May 13, 1917. In 1928-29, however, the scheme was revived and considerable activity ensued. At the northern end a further 65-mile extension was opened from Emungalan to Mataranka on July 1, 1928, and was pushed on *via* Birdum towards Daly Waters, but in September, 1929, on completion of the 51½-mile section to Birdum (on September 4) work beyond that point was suspended, and has not since been resumed. From the south, the 171-mile section from Oodnadatta to Rumbalara was opened on December 23, 1928, and the 122½ miles from Rumbalara to Alice Springs on August 2, 1929. Since the autumn of 1929 no further railway construction has been carried out, and Birdum and Alice Springs are the two railheads today, the former 316 miles from Darwin and the latter 981 miles from Adelaide. As the total distance from Darwin to Adelaide is 1,917 miles, there is, therefore, an inter-railway

gap of some 620 miles from Birdum to Alice Springs. For some little time there has, however, been a road from Alice Springs to Tennant Creek, 313 miles to the north, and the construction of an extension of this road to close the remaining 307-mile gap between Tennant Creek and Birdum—recently rushed through in 3½ months as a defence measure—forms the subject of an article on pages 553-4 in the Road Transport Section of this issue.

Trolleybuses in Germany

More than once in the past we have pointed out that the settled policy in Germany in relation to street transport has been to use rail transport in the form of street tramways wherever justified by traffic density, and elsewhere to use petrol or diesel buses. The trolleybus has not found extensive use in Germany and has been regarded as a form of transport of limited application in special circumstances. War conditions, with shortage of materials, seem to have altered this position to some extent according to a discussion on the relative advantages of trams, trolleybuses, and motorbuses, which appeared in a supplement to the *Frankfurter Zeitung* of September 22. It is stated that in certain districts greatly increased burdens have been placed on transport by the development of armament industries. Moreover, the reduction in unemployment since 1933 has resulted in a general increase in the use of public transport services. Accordingly, the general controller of transport has decided that, where new services must be instituted during the war, a considerable number of them shall be trolleybus services. The immediate advantages are that no steel rails need be laid, and that no petrol or fuel oil is required for operation. Nevertheless, it is still emphasised by the German authorities that in peacetime the trolleybus is seldom the most economical form of transport, and it is contended that its utility is normally limited to towns with populations of between 25,000 and 100,000.

A Plain Case of Breaking the Rules

A summary of Major G. R. S. Wilson's report on the accident at Dolphin Junction, Slough, on July 2, 1941, appears at page 567. The blame is placed on the signalman, who failed to make certain that the conflicting freight train had stopped before allowing the passenger train to cross over in front of it. Indeed Major Wilson is able to show that when he gave permission for the passenger train to move he could not possibly have had the other one in sight, and that his statements as to his having watched it approach are clearly false. The driver of the latter train declared that he had seen his distant signal off and, having to deal with a leaking pipe for a brief interval, did not see it again and was taken completely by surprise by the adverse home signals, the view of which was not very good. There being the possibility that the signals may have been lowered and then reversed, Major Wilson gives the driver the benefit of the doubt. Even if he did misread the main-line distant—which might have been off at the time—there would have been no accident had not the block regulations been grossly violated. It was very fortunate the freight did not cut right through the passenger train. This accident has directed attention to the well-known problem of the working and locking of crossover junctions, which has given rise to much discussion, and upon which, as Major Wilson points out, there is some difference of opinion. It is largely a problem of a choice of risks.

Curve Revision in the U.S.A.

The unceasing energy with which American railways are improving their main lines to permit of higher speeds and heavier single engine loads is well illustrated by the Mercer Hill grade revision project of the Chicago, Rock Island & Pacific Railroad, for which contracts have just been placed. This involves the construction of 14.8 miles of new line from Mill Grove to Mercer Hill, Missouri, diverging as much as

three miles from the old route at one point. The latter had a ruling gradient of 1 in 63½, curves as sharp as 14½ ch. radius and a prevailing curve radius of 30 ch., whereas the steepest grade on the new route will be 1 in 200, the sharpest curve will be of 65 ch. radius, and most of the curves will be of over a mile radius; the new route also will be 1.3 miles shorter than the old. Heavy earthworks are involved, and several large bridges, including one over the Grand river with one 200-ft. and two 90-ft. spans. It was only recently that the C.R.I. & P. brought into use its Arkalon cut-off in Kansas, replacing a winding course of 12.1 miles in the Cimarron valley by a straight line 8.4 miles long from Kismet to Hayne, the principal feature of which is a great viaduct across the Cimarron river, with five 250-ft. spans that consumed 2,700 tons of structural steel. The Atchison, Topeka & Santa Fe has similarly been carrying out an extensive curve revision programme in the interests of its high-speed services between Chicago and the Pacific coast. East of Kansas City alone this work has involved the relocation of 38.6 miles of track and the movement of 2,232,385 cu. yd. of earth and rock. Slueing of track from 90 to 100 ft. was common, and the maximum of movement in a lateral direction was 185 ft. A general minimum standard of curvature of 65 ch. radius has been established on this main line, and fast freight service, now operated at mile-a-minute speeds, stands to gain equally with the passenger trains.

The War and Irish Railways

IT is doubtful whether the entire history of railways has seen any parallel to the present position on the Great Southern Railways of Ireland. For brief periods in past railway strikes and coal disputes the services on some lines have come down to one or two daily trains, but not for more than a few days, and under the stress of war invaded or occupied countries, or countries in course of mobilisation, have seen similar temporary conditions. But the essential difference in the case of Eire is that the present meagre service has every prospect of remaining in force for some considerable time in a country which is not even a belligerent. In view of the almost negligible resources of indigenous coal in Eire, it is a pity that the Drumm battery experiments on the G.S.R. never proceeded further, as with the help of current from the Shannon hydro-electric supply it might have been possible to provide in this way for some of the branches without using coal, the almost complete lack of which is, of course, the cause of these drastic curtailments. Now the railway communication between Dublin and Cork is limited to one train each way timed to take 7 hr. for the 165½ miles; from Dublin to Galway, 129 miles, takes about 5 hr.; every subsidiary main line and country branch has similarly but one daily train; and certain cross-country journeys can no longer be made by rail in the day. Meanwhile the Great Northern, Northern Counties Committee, and Belfast & County Down Railways are able to maintain for the winter, practically without alteration, the ample war train services that have been in operation for the past year and more, drawing their coal supply as they do from the stocks in belligerent Northern Ireland.

Moreover, the present skeleton position in Eire has now been fixed by Government Order, for the Minister for Industry & Commerce, in exercise of his authority under the Emergency Powers Order, has issued directions regarding the conveyance of traffic on the Great Southern Railways from November 19 onwards. These directions, which are outlined at page 551, provide that there shall be no increase in the ordinary rail and road passenger services as at present provided, without the consent of the Minister. On August 1 the G.S.R. had a reserve coal supply enough for two weeks, but it has now been revealed that on October 6 the company had only one day's supply of coal, and its services would have ceased to function but for the company obtaining an emergency supply from Irish sources. On November 14 the coal supply was sufficient for approximately eight days, but any serious interruption in shipping or loading at British ports would bring the Eire railway system partly or wholly to a standstill. Therefore the Government in Eire has made the present drastic Order.

The Basis of Passenger Fares

FOR many years past the passenger fare structures of the British railway companies have been subjected to a process of simplification, and the recent reduction of first class facilities in the London area—which occasioned our review of October 10 of the development of different classes and kinds of accommodation—gives topical interest to a consideration of the basis of the fare structure in Great Britain. The position before 1928 was that every individual railway company had its authorised maxima fixed by its own Acts of Parliament, but in a great many cases the actual fares were below the statutory maxima and were not based on a common policy as between one company and another. Before the beginning of the movement for abolishing second class accommodation and reducing all third class fares to the "parliamentary" figure of a 1d. a mile, William Galt produced a notable volume entitled "Railway Reform: Its Importance and Practicability." This was published in London in 1865 and it contained at page 77 a table purporting to show the average fares per mile of all the principal (British and Irish) railways for first and second class on express trains, which then were often subject to a higher tariff rate, and for first, second, and third class on ordinary trains. This table, which is arranged in rising order of charging rates, is:—

Railway	Average fare per mile				
	Express		Ordinary		
	1st class	2nd class	1st class	2nd class	3rd class
North & South Western ...	d.	d.	d.	d.	d.
North London ...	—	—	0.6	0.5	0.3
Stirling & Dunfermline ...	—	—	0.7	0.4	—
London, Tilbury & Southend ...	—	—	0.9	0.4	—
London, Crystal Palace & Victoria ...	—	—	0.9	0.7	—
Caledonian ...	—	—	0.8	0.6	0.4
Belfast & County Down ...	—	—	1.2	1.1	0.7
Leeds, Bradford & Halifax ...	—	—	1.2	0.9	0.5
Limerick & Castleconnell ...	—	—	1.3	1.0	0.7
Lancashire & Yorkshire ...	—	—	1.4	1.1	0.7
Dublin & Drogheda ...	—	—	1.6	1.3	0.7
South Eastern ...	2.1	1.6	1.6	1.2	0.7
Glasgow & South Western ...	—	—	1.7	1.2	0.7
Great North of Scotland ...	—	—	1.7	1.3	0.8
Belfast & Northern Counties ...	—	—	1.7	0.9	—
London & North Western ...	2.4	1.9	1.8	1.3	0.8
North British ...	—	—	1.9	1.4	0.9
Edinburgh & Glasgow ...	—	—	1.9	1.5	0.9
Ulster ...	—	—	1.9	1.2	0.9
London, Brighton & South Coast ...	2.6	1.9	2.0	1.5	0.9
Great Western ...	2.4	1.7	2.0	1.4	0.8
Dublin & Kingstown ...	—	—	2.1	1.6	0.9
London, Chatham & Dover ...	2.4	1.7	2.1	1.5	0.9
Great Northern ...	—	—	2.1	1.6	0.9
North Eastern ...	—	—	2.2	1.3	0.8
Great Southern & Western ...	—	—	2.2	1.6	0.9
Bristol & Exeter ...	2.6	1.9	2.2	1.7	0.9
Midland Great Western ...	—	—	2.3	1.7	1.0
Midland ...	—	—	2.3	1.7	0.9
Dublin & Belfast Junction ...	—	—	2.3	1.8	1.0
London & South Western ...	2.7	1.9	2.4	1.7	0.9
Great Eastern ...	2.8	2.0	2.5	2.0	1.0
Manchester, Sheffield & Lincolnshire ...	—	—	2.5	1.8	0.9
North Stafford ...	—	—	2.5	1.5	1.0
Cornwall ...	—	—	2.6	1.7	0.9
Leven & East Fife ...	—	—	2.7	1.7	0.9
West Midland ...	—	—	2.7	1.8	0.9
Wellington & Severn ...	—	—	2.7	1.7	0.9
Colne Valley & Halstead ...	—	—	2.8	1.9	1.0
Bideford & North Devon ...	—	—	3.0	2.0	1.0
Stamford & Roulme ...	—	—	3.0	2.0	1.0
Cardiff & Rhymney ...	—	—	3.5	2.0	1.0

The *Observer* of September 22, 1888, stated in a leading article: "Nothing has been done to make the first class or second class carriage better or cheaper than it was 30 years ago," and the late Sir William Acworth discussed this remark in his well-known work entitled "The Railways of England." After showing that in dimensions and comfort very considerable progress had been made in passenger accommodation, he said: "As for fares, a first class passenger to Carlisle in 1858 paid 56s. 6d. — except by the 'Limited,' by which 66s. was charged—a second class 40s., as against 40s. 6d. first, and 32s. second,* to-day. To Liverpool the fares were, first class 45s. express, 37s. 5d. ordinary; second class 27s. Today the fares are 29s. first and 21s. 9d.† second class by all trains." The asterisk and dagger are the footnotes to Acworth's fifth edition (1899) by which time the fare marked by an asterisk had been reduced to 26s. 8d., and that with a dagger to 20s. 8d. Thus is clearly indicated the fact that there was no permanent standard in Great Britain, but that there was a tendency towards reduction to a scale substan-

tially below the authorised maximum. There can be little doubt that this tendency towards reduction received a tremendous fillip from the action of the old Midland Railway Company in first admitting third class passengers to all trains (in 1872) and in abolishing second class altogether (in 1875). The Midland Railway then charged a uniform fare of 1½d. a mile first class single, and a 1d. a mile third class single, with no reduction on return tickets. The companies in competition with the Midland, namely, the Great Northern Railway, the London & North Western Railway, and the Great Western Railway continued to maintain a fare approximating to 2d. a mile first class, with a reduction on return tickets, excepting between points where a competitive service was offered by the Midland Railway; in such instances the Midland scale of 1½d. a mile single, with no reduction on returns prevailed on the competing route.

The maximum fares for many railway companies were 3d. a mile first class, 2d. a mile second class, 1½d. or 1d. a mile third class, as generally prescribed in their respective Acts of Parliament, and 1d. Parliamentary. The double scale for third class fares was continued on many routes for several years, but after the action of the Midland Railway Company in 1872, the 1d. a mile became more and more the general standard. This led to the Inland Revenue authorities claiming the 5 per cent. passenger duty on 1d. a mile fares charged on trains which did not stop at every station. This difficulty was not finally removed until the Cheap Trains Act of 1883 freed all 1d. a mile fares from duty. Railway passenger duty on all fares ceased to be chargeable by virtue of the Finance Act, 1929. The railway companies then undertook to expend upon a special programme of works sums based upon the capitalised value of the duties remitted. The 3d. a mile first class and 2d. a mile second class prevailed generally on the South Eastern and the London Chatham & Dover Railways until 1895, when the ordinary fares for first and second class were reduced to 2d. a mile first class and 1½d. a mile second class, but express fares continued to be charged on the Dover and Folkestone boat trains at 3d. a mile first class and 2d. a mile second class. When the two companies were in active competition there were many anomalies in fares, and there were some reductions on third class return tickets. At the time when these companies revised their fares in 1895, the third class return fares were generally put up to double the single fare and, in cases where the third class single fare had been below a 1d. a mile, it was levelled up to the full 1d. a mile.

On the North Eastern Railway the scale prevailing in the nineties for its own local traffic at ordinary fares was slightly below 2d. a mile first class, with no reduction on return tickets, and 1d. a mile third class, with a reduction on return tickets which made 1½d. a mile for the double journey. The Great Eastern Railway had at the same period for traffic outside the suburban area a first class single fare of 2½d. a mile with a reduction on return tickets, and the third class was 1d. single with no reduction on returns. The scale sanctioned on the London Brighton & South Coast Railway by its Act of 1868 was 2½d. first, 1½d. second, and 1d. third. For the South Eastern Railway the original main-line maximum fixed by the Act of 1836 was 2d. a mile for all classes plus a reasonable charge for locomotive power, and by virtue of Section 129 of that Act the total maximum was interpreted by the company as 3½d. On the Tonbridge-Hastings section, on the North Kent lines, and on most branches, however, the maxima were 3d., 2d., and 1½d., or 1d. The maxima prescribed by the South Eastern and London Chatham & Dover Railways Working Union Act of 1899 were 3d., 2d. and 1d. For all classes on the Taff Vale Railway the maximum was 3½d. a mile. By way of contrast the maxima on the London Tilbury & Southend Railway were fixed by its Act of 1852, on the suggestion of its promoters, at 1d., ½d., and ¼d. These instances sufficiently indicate the lack of standardisation both in methods and scales of charging.

During the last war, ordinary passenger fares were increased by Order of the Board of Trade by 50 per cent., as from January 1, 1917. Season ticket rates were for the most part not affected by this Order. The main object of this increase was to discourage travel. After the war, however, higher costs made it necessary to secure more revenue, and for this purpose all ordinary fares were increased by a further 25 per

cent. as from August 6, 1919, thus making the ordinary third class fare 1½d. a mile. When the railway companies, by virtue of the Railways Act, 1921, regained control of their undertakings on August 15 of that year, they generally adopted fares of 2½d. a mile first class and 1½d. a mile third class. As the result of the decision of the Railway Rates Tribunal constituted under the 1921 Act, these fares became, as from January 1, 1928, "standard" for the four amalgamated companies created by that Act, and also for the non-amalgamated companies. A "standard" scale for season tickets, the charges for which had previously been within the discretion of each company, was also laid down by the Railway Rates Tribunal. That Court also prescribed a scale for workmen's fares, which had hitherto been governed by special statutory provisions, or, where necessary, ordered by the Board of Trade under the Cheap Trains Act, 1883. Subsequently, of their own motion, the railway companies introduced on May 1, 1933, monthly return tickets, which were equivalent to 1½d. a mile first class and 1d. a mile third class, for the double journey.

A general increase, subject to certain exceptions, in passenger fares, season tickets, and workmen's fares, outside the London Passenger Transport Area, was sanctioned by the Railway Rates Tribunal in July, 1937, and became operative in October of that year. In 1939, shortly before the present war, a similar increase was extended to the London Passenger Transport Area. The much higher cost of working during the present war has led to a general increase of 16½ per cent. in fares, season tickets, and workmen's tickets, over the scales prevailing before September 4, 1939. Of the total, 10 per cent. became effective on May 1, 1940., and the further 6½ per cent. on December 1, 1940; the latter excluded local fares in the London area.

Central Argentine Railway Limited

GROSS receipts for the year ended June 30, 1941, amounted to £7,927,119, and were £476,965, or 5·7 per cent., lower than those of the previous financial year. The working expenses of £6,974,140, on the other hand, showed an increase of £117,614 or 1·7 per cent., and the net earnings of £952,979 were, accordingly, £594,579 lower. Exchange differences were, however, reduced from £712,662 to £502,532, and the net receipts of £450,447 contrast with £834,896 for the previous year. Returns of £29,167 from investments bring the total net revenue for the year under review to £479,614, out of which payments for the year have been made, totalling £131,291, for general interest, and for interest on the 3½ per cent. Central debenture stock and the 4½ per cent. Western Annuity, leaving a credit balance of £348,323. Payment of the year's interest on the other debenture stocks and on the 5½ per cent. bearer notes, amounting altogether to £1,145,966, has been postponed under the moratorium scheme of November 21, 1940, and the final result is a debit balance of £797,643.

Passenger receipts were lower by £86,338 or 4 per cent., although the fall in passenger numbers was only 0·7 per cent. On the goods traffic side the decrease of £223,560 or 4·6 per cent. was mainly due to maize and general merchandise. Receipts from wheat rose by £84,691 or 8·3 per cent. and from petroleum and naphtha by £45,719 or 12·3 per cent., but maize takings fell by £240,160 or 38·6 per cent., with a drop in tonnage of 53·1 per cent., and general merchandise receipts decreased by £123,143 or 15·3 per cent., with a fall of 27·2 per cent. in tonnage. Some operating figures are compared in the accompanying table:—

	1939-40	1940-41
Number of passengers	53,287,702	52,925,751
Passenger receipts	£2,176,011	£2,089,673
Public goods traffic, tons	6,156,382	5,443,534
Public goods traffic, receipts	£4,830,667	£4,607,107
Average receipts per ton of goods	15s. 8½d.	16s. 1½d.
Public traffic train-kilometres	21,468,519	19,518,016
Net profit per train-kilometre	1s. 5½d.	1½d.
Net profit per kilometre of line	£259 18s. 4½d.	£160 1s. 8½d.
Operating ratio, per cent.	81·59	87·98

As to working expenses the report points out that the figure includes contributions of £191,840 to renewal funds, against nothing in 1939-40. In the direct working expenses there was an aggregate reduction of £74,226, in spite of the continually rising costs of materials; for instance, the fuel bill alone was £472,171 higher than in the previous year.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Smoking Prohibited

London,
November 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I am glad to see the timely letter from Mr. F. W. Dalley on this subject in your issue of November 14, and hope this, and your editorial comments, may receive attention in the proper quarter. At the same time, and in justice to the men concerned, I should like to add that on the Bakerloo Tube (both Watford and Stanmore lines) the guards invariably admonish, in a discreet whisper and without being asked to do so, any tobacco addict who smokes in their presence in a non-smoking carriage.

I am, Sir,
Yours faithfully,
GEORGE L. BOAG

New Railway Agreement

30, Fosse Way, West Ealing, W.13
November 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I desire to draw your attention to the new agreement, which in my view is a "raw deal" inflicted by the Treasury on the unfortunate stockholders, who especially at this time should command the respect and admiration of the country for having kept their property, at a tremendous sacrifice, in a position to take the strain of war. Without railways the Government could not prosecute the war.

I write as a holder of railway securities, and base my opinion on the following data :—

1914 Agreement.—Stockholders were granted an annual payment of approximately £50,000,000, and Lord Runciman admitted later that the bargain had turned out to be an excellent one for the taxpayer. There was at that time no liability for A.R.P., war damage, and E.P.D.

Original Agreement (present war-period).—A revenue of £35,600,000 granted to the stockholders with the right to share in agreed proportions, up to a maximum revenue of £51,600,000. Permission to charge £10,000,000 against a pool each year to be deducted from working expenses, if necessary, to cover wartime losses. The right to have charges raised *pari passu* with increased cost in wages bill and materials.

New Agreement.—Stockholders are given a rental of £38,160,000 for their property, but are liable for E.P.T., A.R.P., and war damage on terms yet to be arranged. This remuneration on the replacement value of the railways (£1,500,000,000, *vide* the late Lord Stamp), amounts to only 2½ per cent., which means in effect that hundreds of junior stockholders will receive no dividend on their holdings.

Colonel Llewellyn acknowledged in the House that the railways did not admit that the rental of £38,160,000 was in any way representative of the earnings on existing or potential traffics. There is no question whatever that had the railway companies been given the right to raise rates and fares *pari passu* with costs in wages and materials, the standard revenue would have been reached and surpassed. Consols at today's price yield 3½ per cent., and this basis should have formed the datum line in the negotiations between the railways and the Treasury. In compulsory purchase of land under Acts of Parliament, a sum of 10 per cent. is allowable for compensation on the normal valuation price; similarly, there should be 10 per cent. on the rental which in the present circumstances would have added another £3,900,000 a year on the present rental and resulted in a yield of nearly 2½ per cent.

It may be well to recall the following facts :—

1. Parliament placed a duty on the Railway Rates Tribunal to earn the standard revenue, *viz.*, £51,359,095, authorised in 1921 and responsible Ministers now admit that this could be earned in the present circumstances. The standard revenue would yield over 4 per cent. on the nominal capital.

2. In the past, assets have been operated at a loss in order to meet any emergency, including possible wartime conditions.

3. Increase in traffic as a whole is probably in the neighbourhood of 13 per cent., and this is being worked with a depleted staff, locomotives, and other rolling stock.

4. The Government sought the railway companies' assistance in providing personnel, locomotives, etc., for service overseas; while being of great use to the military authorities, this has its reflex on the difficulty of moving traffic at home.

5. Many junior stockholders have gone without dividends for a number of years in order that railway operation could be maintained at a high standard, without which the railways could not

have taken the strain under which they have been and are working today.

6. Railways are of more value to the nation now than in the last war owing to the heavier war equipment that has to be carried, and the greater need for restricting road transport in order to conserve petrol and oil stocks.

7. No dividend will be distributed on at least £80,000,000 of capital.

In my opinion, the railway stockholders have been the most national-minded of any investors, and do not deserve the abuse which is hurled at them by "Left" M.P.s. in Parliament, with the object of the stockholders being "blackmailed" into parting with their undertaking to the Government during the war-period at a sacrificial price.

I consider that in the true interests of the nation, rates and fares must keep abreast with costs, thus saving the taxpayer subsidising the users of the railways; subsidies are a contributory cause of inflation. Among other things, true costs of exports cannot be ascertained under a subsidised regime, and suppliers making forward contracts may suffer losses when the railways resume control and have to raise their charges to an economic level. It would be interesting to know how shipping and other industries, the control of which has been taken over by the Government, have fared financially, compared with the railways, in their agreements with the Treasury.

In the light of the foregoing, stockholders have a justifiable right to ask that this unfair contract be withdrawn, and another substituted based on equity and fair-mindedness. As to the incidence of war damage, on grounds of equity, this should be covered from revenue and certainly should not be allowed to fall entirely on the junior stockholders.

John Bright said "Railways have rendered more service and have received less gratitude than any other institution in this country."

Yours faithfully,
DONALD F. SOUNDY

Lost Property

Coventry House, South Place,
London, E.C.2
November 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—One of our staff found a purse containing money in one of the coaches of the Central London Railway, and, being honest, took this purse with its contents to the Lost Property Office of the London Passenger Transport Board at Baker Street. After filling in the usual forms, it was asked whether in the event of the original owner not claiming this money, what would become of it? The answer given was, that the railways would keep the money, and it would not be returned to the person who found the purse.

Surely this makes one dishonest and accounts for many a lost article not being returned to the Lost Property Offices of the various railway companies.

It can only be assumed that, in getting money that is unclaimed, the railways use it for their own benefit, and surely it is about time that this practice ceased to exist, otherwise it does not pay to "play the game" and return any lost article or money found.

Yours faithfully,
A. H. BAUGHEN

[The London Passenger Transport Board makes a heavy loss in administering the lost property service to the public, as will be seen from the following extract from the sixth annual report and accounts of the board for the year ended June 30, 1939, regarding lost property :—

The total revenue for the year, comprising fees paid by the public and the proceeds of sales of unclaimed property, amount to £12,188, being £118 or 1 per cent. less than the amount for the preceding year. Of the total revenue, £5,664 is payable under the London Passenger Transport Board (Lost Property) Provisional Regulations, 1933, to a general fund for the benefit of the board's employees. The cost of the service rendered to the public amounted to £9,905 so that there was a loss to the board of £3,381, excluding the interest charges and depreciation on the capital expenditure involved. The total number of articles received at the Lost Property Office was 330,838, or 9,889 more than in the preceding year. Of the number of articles received approximately 33 per cent. were restored to their owners.—Ed., R.G.]

THE SCRAP HEAP

SUPER WATERPROOFING

An extract from "The Fact Book," which has been kept by the Divisional Engineer, Plymouth, G.W.R., and his predecessors for nearly a century.

Dissolve 6 oz. hard yellow soap in one gallon of water over the fire. Mix in cold water 6 oz. of wheaten flour and add to it $\frac{1}{2}$ lb. of common yellow ochre, mix the whole together over the fire until it boils, when cold is fit for use. One coat of this is given each side of the canvas, and when dry is ready for the oil preparation. Grind in boiled linseed oil, $\frac{1}{2}$ lb. of sugar of lead or patent dryers, $\frac{1}{2}$ lb. of common yellow ochre. Dissolve in boiled linseed oil $\frac{1}{2}$ lb. of bees wax, add boiled oil to make one gallon, mix the whole together and keep it stood until it boils, being very careful it does not boil over. This is for one gallon but you may double or treble the quantity as may be required.

Two coats of this preparation must be given on both sides of the canvas.

TRAFFIC IN FORGED RAILWAY PRIVILEGE TICKETS

"You have before you a number of persons who would not think of being dishonest in any other form. But railway companies seem to be fair game to everyone, and many people think that to defraud a railway company is quite a proper thing to do." This sentiment was expressed by prosecuting counsel at a London police court recently when 27 persons, including railwaymen, appeared before the magistrate to answer 90 summonses relating to the misuse of railway privilege tickets. Evidence was given of the discovery of an organisation having the saloon bar of a public house as its headquarters, which trafficked in forged railway privilege tickets. The matter came to light after protracted inquiries by G.W.R. detective officers, and extending to places as far afield as South Wales and Devonshire. Sentences varying from six months' imprisonment to fines of £9 and two guineas costs were imposed by the magistrate.

ORIGIN OF THE GRADIENT POST

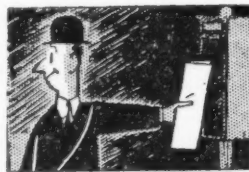
The general adoption of the railway gradient post was the result of an accident that occurred on the Eastern Counties Railway on August 4, 1845, when an engine ran off the line on a steep gradient near Chesterford, while travelling at excessive speed, writes a correspondent. As a result of the inquiry into the causes of the accident, the Board of Trade Railway Department recommended the general introduction of gradient posts whereby every change of gradient would be marked conspicuously on the arms of wooden indicators. The Midland Railway Company had previously introduced a system of marking gradients on its line, to assist new drivers to regulate the speed of the train.

A CALCULATING PHENOMENON

One of the most remarkable figures in early railway history was George Parker Bidder, F.R.S., an eminent civil engineer and mathematician. He was born in 1800, and was known in early life as "the calculating boy." At the age of six he began the study of figures, and the gradual steps by which he acquired his marvellous powers of calculation were fully outlined in an address which he gave to the Institution of Civil Engineers in 1856. He exhibited his mathematical prowess before George III and Queen Charlotte. So great was his reputation that it is recorded that on one occasion

an opposing counsel asked that he should not be allowed in the Parliamentary railway committee-room, on the ground that "nature had endowed him with qualities that did not place his opponents on a fair footing." It is said of him that he could work out on the instant, and in his head, difficult calculations which would occupy most men a considerable time and the use

Browned Off!



(With apologies to London Transport.)

Billy Brown of London Town
Simply loves to put us right,
Bids us carry something
white
When we're on the road at
night.
Billy Brown of London Town
Bumps against us in the
thrang,
Hasn't been beside us long
Ere he says we're doing
wrong.
Billy Brown of London Town,
I'm a foolish out-at-nighter,
But, you chronic putter-
righter,
Interfering little blighter.
Some day very soon, by heck,
Billy Brown—I'll wring your
neck.
BEE.

[From the "Daily Mail"]

of pencil and paper, for he was never at a loss and was most minutely accurate. He was a close friend of George Stephenson, and assisted him in many of his railway projects. He became Engineer of the London & Blackwall Railway, and was the originator of the railway swing bridge, the first of which he designed and erected at Reedham on the Norwich & Lowestoft Railway. His works include the Victoria

Docks, London. When the Electric Telegraph Company was formed, Bidder was one of its promoters. The Institution of Civil Engineers elected him President for the year 1860-1. Bidder died at Dartmouth in 1878, and is buried in the adjacent village of Stoke Fleming.

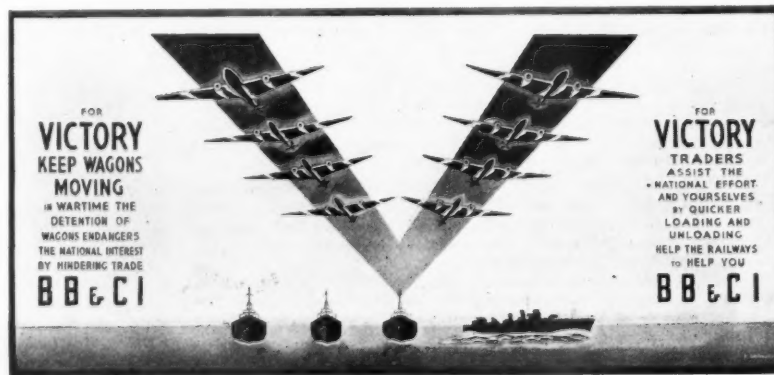
SAVING PAPER

The following extract is taken at random from a Government Order, in this case the Limitation of Supplies (Cloth and Apparel) Order:—"Where goods are or were invoiced by a registered person to another registered person who in relation to the supply of these goods is or was the agent either of the supplier or of the person to whom or to whose order they are or were to be supplied, the supplier shall be deemed to supply or to have supplied these goods to the agent, and, when the goods are or were supplied to or to the order of the person to be supplied, the agent shall be deemed to supply or to have supplied them." May one suggest that the elimination of this sort of rubbish would not only save paper, but would release the men who concoct it and the thousands employed in interpreting it for the Forces?—*Mr. J. Dolby in a letter to "The Times."*

On Wednesday night, the Midland Railway Company began to use the electric light on their system, the light being used for the first time on the London and Manchester and Liverpool express. The dynamos are situated in the rear guard's van, the driving gear being attached to the axle of the front pair of wheels. The speed of the dynamos is found to be very quickly and easily regulated and during the run from London to Leicester the light was quite steady and brilliant. During the stoppage of the train to change engines the light was kept perfectly steady by the accumulators.—*From the "Derbyshire Advertiser" of June 1, 1889.*

MEN STILL NEEDED

Practically the whole of the redecoration of Slades Green (Kent) railway station is being done by women. There is only one snag in their work—they cannot move the extending ladders, and have to call on members of the male staff to bring the ladders so that they can get down.—*From the "Evening Standard."*



Unusual hoarding in a B.B. & C.I.R. yard in Bombay showing the V for Victory sign formed by aircraft, and the V symbol in morse depicted by three ships in convoy representing the dots, and the escorting destroyer the dash

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

CANADA

Victoria Jubilee Bridge

In mid-October 40 years ago the Victoria Jubilee bridge over the St. Lawrence river was officially opened by T.R.H. the Duke and Duchess of Cornwall & York (afterwards King George V and Queen Mary), though it had actually been used for double-line traffic since December 13, 1898. Its length is 6,592 ft., or 1¼ miles, and it replaced an earlier tubular bridge opened in 1860 by H.R.H. the Prince of Wales, later King Edward VII.

The present bridge uses 5,000 gal. of paint for each coat, which takes 12 painters two painting seasons, April to October, working 8 hr. a day, to apply.

BRAZIL

Railway Extension in Parahyba

A sum of \$1,000,000 has been allocated to the Department of Transportation & Public Works for a railway extension from Bananios to Picui in the State of Parahyba; this will enable a beginning to be made with construction work.

Project for Iron-Ore Railway

Negotiations are in train between the Governments of Brazil and the United States with a view to financing the construction of a new line of railway to carry the iron ore of Minas Geraes to the port of Victoria. Included in the scheme are extensive improvements of facilities at that port. The United States administration and industry are directly concerned, as it is estimated that the project should enable Brazil to export to the U.S.A. three or four times the quantity of ore now being shipped from Rio de Janeiro. The total estimated cost of the proposed development works is put at U.S. \$20,000,000, but, in the circumstances, this outlay may well prove a good investment by the U.S.A.

SLOVAKIA

Locomotive Orders

The Slovak State Railways recently placed an order for ten locomotives to the value of Kr. 15,000,000 with the Hungarian Waggon und Maschinenfabrik of Budapest. Payment will take the form of barter supplies (66 per cent. iron ore, and the balance in timber) of which the Hungarian Rima-Muranyi Salgo-Tarjan Iron Works will be the recipient. The Waggon und Maschinenfabrik has been the property of the iron works since 1935.

INDIA

Further Curtailment of Non-essential Traffic Likely

Unlike the average curtailment of traffic amounting to about 25 per cent. during the last war, there has so far been a relatively small reduction in passenger services throughout this country during the present war. Now, however, despite the unusually heavy goods and passenger traffic offering, further increase in transport facilities and capacity cannot be provided, as a strict economy in the use of engines and rolling stock has to be enforced. The reason for this economy is the tardy delivery of stock from builders abroad. Orders for locomotives and boilers placed as long ago as 1937 are still unfulfilled, and others sub-

sequently placed are likely to be indefinitely outstanding due to the war.

There is, therefore, every likelihood that further curtailment of passenger services will be essential in the near future to insure uninterrupted war transport and traffic necessary for the life of the country. It must not be forgotten that India is producing many times the quantities of munitions and other war supplies she turned out during the last war, practically all of which have to be carried by rail, many of them hundreds of miles.

EIRE

Government Directions to G.S.R.

The Minister for Industry & Commerce in Eire has given directions as regards the operations of the Great Southern Railways Company on and from Wednesday, November 19. The directions provide that there shall be no increase in ordinary passenger services as at present provided; that the company shall exercise the greatest speed practicable in the loading and unloading of goods vehicles where such service is performed by the company; that where the service of loading and unloading is not provided, the vehicle shall be put at the disposal of traders at the earliest practicable time, and the free period allowed to traders shall not exceed one day from receipt of such notice. Where such loading is not completed within the free period, the vehicles may be put to other purposes by the company, and where such unloading is not completed within the free period, it shall be undertaken by the company at the expense and risk of the consignee. All rail and road vehicles and engines available for carriage of goods, minerals, and livestock shall be assigned primarily to the carriage of the following descriptions of traffic, and other traffics carried only to the extent that said descriptions are not available for carriage:—

Traffic having priority and order of such priority

1. Livestock being sent to and from markets or fairs or for shipment;
2. Beet, sugar, and beet-pulp;
3. Grain and products of grain in covered wagons;
4. Coal;
5. Turf and cut timber for fuel;
6. Petroleum products and industrial alcohol;
7. Milk, cream, returned empty milk and cream cans, dressed meat, cooked meat, fish, and live and dead poultry;
8. Eggs;
9. Butter.

Railway Wage Anomaly

An unusual situation has arisen in connection with the Irish railways. Recently the Northern Counties Committee of the L.M.S.R., which operates exclusively in the six counties of Northern Ireland, decided, in agreement with the unions concerned, and independently of the Railway Wages Board, to increase the war bonus payable to its workers by 2s. 6d. a week for adults and 1s. 3d. a week for juniors, as from August 1. The Great Northern Railway agreed to follow the example of the L.M.S.R., but immediately was faced with the fact that it was estopped by the Eire Government's Order No. 83, under the Emergency Powers Act, from increasing the remuneration of its workers in the Southern area, as that enactment is a "stand-still" order in respect of wages. Consequently, an anomalous position has been created; those Great Northern railway workers whose home stations are on one

side of the border are being given increased war bonuses, while those on the other, through no fault of the company, remain at their former rates of pay.

Coal Supply

The reduction of the main-line passenger service to one train a day in each direction, due to the limited quantity and poor quality of coal supplied to this country, has followed an already greatly reduced train service in operation since July last. The quality of the coal has had serious reaction on the punctual running of both passenger and goods trains and even in shunting at stations. Due to late running, the arrival of the goods trains at destination has been so late that the wagons often cannot be unloaded until late in the evening on the day of arrival or perhaps until the next day, with the result that the outgoing trains are in turn delayed, and the further late arrival reacts on subsequent days. The number of locomotives in service has been greatly increased, but even with these the working has not been satisfactory and the difficulty of supplying rolling stock has become intensified.

Turf Traffic

Due to the reduction in the household and factory coal supplies, the use of turf as a substitute has increased tremendously. This traffic is practically all conveyed by the railways to the cities and has provided additional revenue, as formerly the coal which was brought to the ports was used in the neighbouring cities, but the turf must be conveyed long distances on rail to these cities. On the Great Southern line several turf trains are arranged every day, and this, of course, necessitates trains of empty vehicles in the reverse direction. Some trains are also run over the Great Northern line. The beet traffic is now at its peak and requires approximately half the total number of coal trucks on the Great Southern system, which makes the provision of wagons for the turf a difficult matter. At least 1,000 wagons are required for the turf traffic; but when coal boats arrive they must be discharged at once at the ports and, to enable this to be done, the vehicles supplied for the haulage of turf must be withdrawn temporarily to carry the coal. The experience gained by the present situation will no doubt mean that, when circumstances become normal, turf will continue to be used to replace the use of coal to a large extent.

Old six-wheel passenger coaches destined for the scrap heap have been given a new lease of life by the Great Southern Railways. These coaches, obsolete so far as their original purpose is concerned, have been converted into turf-carrying wagons by having their roofs taken off and their sides strengthened. Fourteen or fifteen old coaches have been changed over, and 12 of these now constitute a set train used exclusively for the transport of turf. The company is continuing to convert such old coaches as are available, to a total of 30, and further trains will be constituted as soon as possible.

Turf occupies about 2½ times the space required for coal, and, to enable low-sided coal trucks to be used to capacity, about 500 of these vehicles have been fitted with wire netting or wooden creels, the latter when wire netting is not available.

NEW STATIONS AT ROME

The work includes nine new stations, a marshalling yard, and a new locomotive depot

The rebuilding and renovation of Rome's main-line stations and approach lines are being continued with little interruption so far. No realignment of railways is involved, but additional goods, carriage, and locomotive lines along certain main-line sections are being provided; also, the widening of station yards, and the building of new stations on a monumental scale are in hand. The station, yards, and depots under reconstruction are the main terminus Termini, the passenger stations Tiburtina, Prenestina, Tuscolana, Ostiense, the marshalling yards Littorio, locomotive sheds San Lorenzo, and goods stations Trastevere and Ostiense, all on the Italian State Railways. Connected with these works is the new underground railway, eight miles long, from Termini station *via* Ostiense to the new exhibition grounds near Magliana. Magliana station on the Pisa main line is also being enlarged.

Main Station

Termini station is being rebuilt, 220 yd. further down the line; the station square, Piazza dei Cinquecento, is thereby enlarged and room is available for the new underground terminus and access from the street. All the space remaining available in the old station yard is taken up by the new passenger station, but the locomotive sheds have been removed to San Lorenzo on the Florence main line, and the carriage sidings to Prenestina on the Sulmona main line. The new Termini station has a main colonnade facing the square and two long wings one along each side of the railway. The front is occupied by main entrances and exits and connections with the underground railway and the basement, the wing on the left or departure side contains all accommodation for outgoing passengers, and the wing on the right has large luggage offices, waiting room for arrivals, and station offices. The streets along the wings are on a downward slope, and join a main street which crosses under the station. On the departure side there is, in this street, a suburban booking office serving a separate local station with its own passenger and service accommodation; on the arrival side are the parcels office and the mail department. The main buildings enclose a wide circulating area with 22 platforms and 11 pairs of tracks; the platforms are also interconnected by two subways—one half way down, the other at the end of the platforms—each with exits to the street at each end; there are also refreshment and other public rooms. The suburban part of the station has five short platforms. In the basement of the buildings are shops and a chapel.

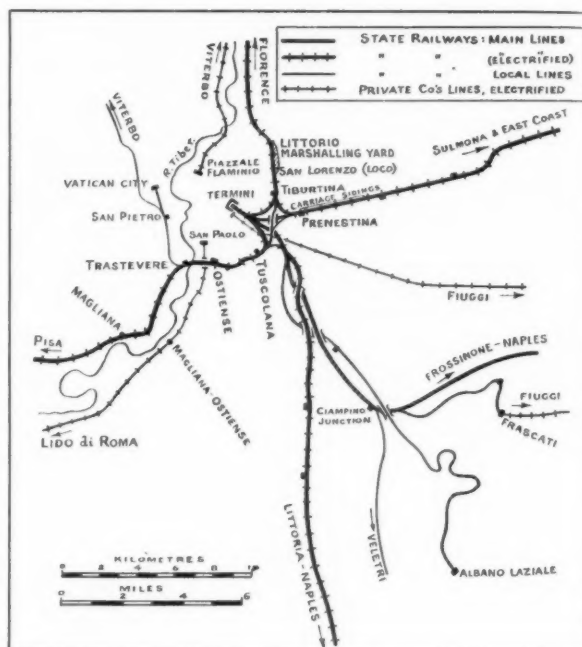
Prenestina and Ostiense Stations

The rebuilt Prenestina station has been in service since the end of 1939. The carriage sidings for Termini station adjoin, 42 sidings in all, 6 of which are covered in to accommodate electric trains. The sidings are connected by separate pairs of tracks with Termini station and with the locomotive sheds at San Lorenzo.

The new Ostiense station replaces a small local station at which only slow trains called, but will be the terminus for all local trains from the Pisa and Viterbo lines and branches, and the official reception station for important State visitors; it may be recalled that Hitler arrived there on his first visit to the Duce. This station was formally opened on October 28, 1940, and has five through tracks, serving four platforms, subway connections with the underground, and the adjacent S. Paulo station of the electric railway to the Rome Lido. It was described and illustrated in THE RAILWAY GAZETTE of July 5, 1940. Alongside this station has been opened a new local goods station, Ostiense Goods.

Locomotive Depot and Marshalling Yard

Tiburtina, the first passenger station out from Termini on the Florence line, is nearing completion, and, like Ostiense,



Sketch map of the railways in the neighbourhood of Rome

has been rebuilt, though on a less elaborate scale. Near it have been constructed the extensive locomotive sheds and sidings known as San Lorenzo, and connected with this station is the large Littorio marshalling yard, already in operation. This yard has a length of two miles alongside the Florence main line, a width of 400 yd., 100 miles of sidings, humps, and electrically-operated shunting points; its capacity is given at 3,000 wagons daily.

The renewal of Tuscolana station will be begun shortly. With the opening of Ostiense goods station and Littorio marshalling yard, the existing main goods station at Trastevere has been remodelled to serve as a local goods station only. Magliana station, on the Pisa main line is, as stated above, being extended to serve as one of the stations for the new exhibition grounds. Mussolini has given orders that all the works now under construction must be ready in 1942.

THE SILVERTON TRAMWAY'S OPERATIONS IN 1940-41.

This undertaking, which belongs to the Silverton Tramway Co. Ltd., is in reality a railway of 36 miles on the 3 ft. 6 in. gauge from Cockburn in South Australia to Silverton and Broken Hill in New South Wales, forming a link between the railway systems of the two States. It was opened on January 2, 1888, and is dependent mainly on mining traffic. In comparison with 1939-40 the tonnage carried during the year ended June 30, 1941, declined by 71,924 tons, and the fall in revenue was £12,245. Passengers carried by three trains weekly increased from 30,725 to 36,670, attributable to troop movements and shortage of petrol. Working costs were reduced by £5,438 notwithstanding the increased cost of stores and coal and the continued rise in the basic wage. New 31-ton ore wagons to the number of 210 are now in traffic and are giving a much improved and more economical service as compared with the older small-tonnage units. The South Australian Railways will build a further 60 this year of which 10 will be for this company's account.

ROAD TRANSPORT SECTION

The Overland Route To Darwin

A description of the building of the final road link in the rail-cum-road route connecting Adelaide and Darwin

UNTIL 1940 there was a 307-mile gap in the land communications between South Australia and Darwin, in the Northern Territory on the Timor Sea, namely, from Tennant Creek to Birdum, and the only connection between these places was by the overland telegraph line and a track beside it. There was, however, the railway from Adelaide to Alice Springs, 981 miles, and onwards a 313-mile road ran from Alice Springs to Tennant Creek. From Darwin southwards there was, moreover, a line of railway 316 miles long terminating at Birdum. In that year it was considered essential to complete the continuous line of communications from Adelaide to Darwin, 1,917 miles in length, by building an extension of the inter-railway Alice Springs—Tennant Creek road from the latter point to Birdum. The State Governments of South Australia, Queensland, and New South Wales agreed to construct this 307-mile road jointly, each undertaking to complete about 100 miles of it. As, however, this construction was decided upon by the Commonwealth Government in August, 1940, only, and as the route lay through country liable to inundation by flood water once the rainy season began in December, it was essential for the whole work to be completed in under four months, a difficult task seeing that men and mechanical appliances had to be transported over long distances by sea and rail, or by rail and road, or by rail and bush track.

Each of Three States Undertook One Third

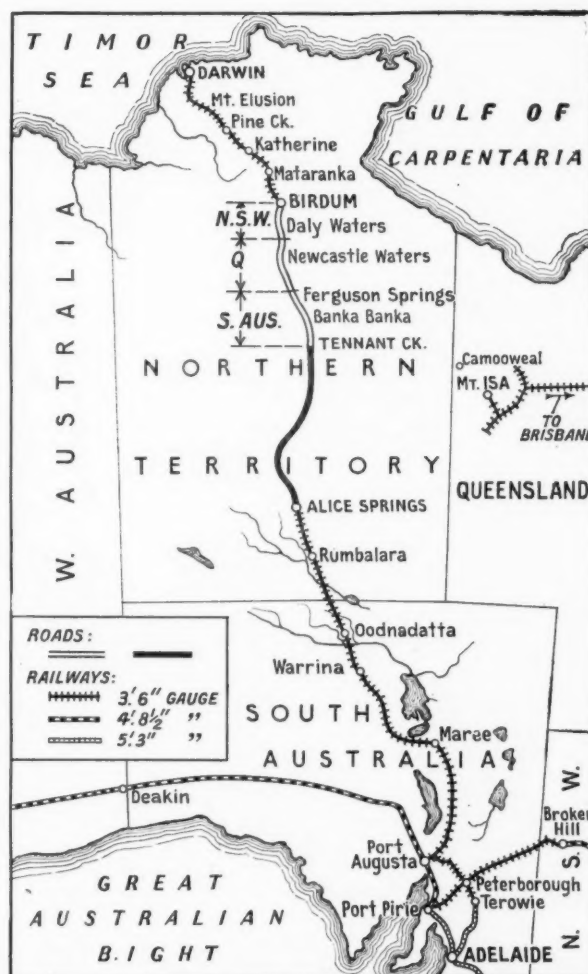
Having regard to the most suitable means of transporting the men and plant to the job, the work was divided up as follows. The southernmost 117 miles were allotted to the South Australian Government, as it was the most accessible section from Adelaide via Port Augusta to Alice Springs by rail and thence by road to Tennant Creek. The central section, 100 miles in length, was undertaken by the Queensland Government, as Newcastle Waters in that section could be reached by a bush track 566 miles long from Mt. Isa, the nearest railhead on the Queensland railway system, 1,435 miles from Brisbane. The heavier plant had, however, to be sent round by sea from Brisbane to Darwin and onwards by rail and across country. The northern section of 90 miles was given to the New South Wales Government, as its labour and equipment could most easily be sent round by sea from Sydney to Darwin and thence by rail to Birdum. Such unusual preparations had to be made as the country traversed by the new road was incapable of producing either the men or machines necessary to complete over 300 miles of all-weather road within a working period of three months, as work actually began in September.

Practical Military Assistance

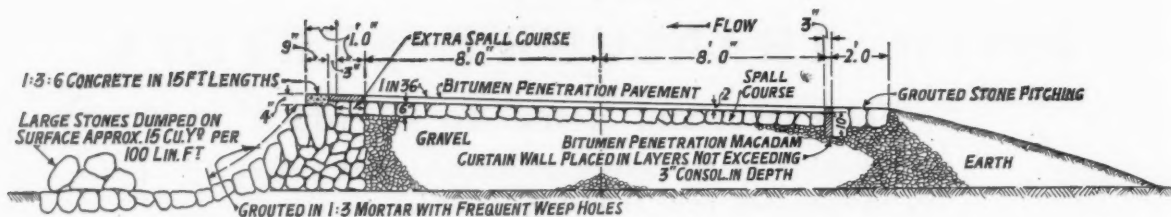
Camps and depots were established at suitable spots on each section and the Commonwealth military authorities undertook the supply and transport of food of all kinds and arranged for its preparation in field bakeries and kitchens by army personnel, and its storage in mobile refrigerators. They also provided Army Medical staff and hospital tents, and supervised all sanitary arrangements and water supplies. These remarks applied to all three sections. In addition, an Army Signalling section maintained communications throughout the work both by wireless telephone and by tapping the overland telegraph line.

Tennant Creek is a straggling mining township in a gap in the McDonall range, established to exploit nearby gold and wolfram deposits. The country onwards consists of undulating ground alternating with lower land of black soil subject to flooding. Newcastle Waters is a small settlement on the west of Newcastle Creek, a depression about a mile wide,

usually dry but filled with from 4 ft. to 6 ft. of water in the wet season. Birdum is situated on a rise surrounded by low ground such that it is cut off for several months during the wet season except for the railway, and even this is sometimes inoperative due to the submergence of the Birdum Creek viaduct for several months on end. To prevent rail interruption, a new siding was built on higher ground three miles north of Birdum as part of the road construction. During the summer, excessive heat is experienced, shade temperatures of 120° F. sometimes being registered. The atmosphere is, however, dry except after thunderstorms. Considerably lower night temperatures make the hottest weather bearable. The wet season lasts from early December to April. The northern half of the country traversed by the new road is more heavily timbered than the southern half. Between Newcastle Waters and Birdum there are not many large rock formations and the few outcrops encoun-



Map showing the overland route and the portions allotted to each constructing authority



Cross section of Newcastle Creek causeway

tered consisted of crystalline magnesium limestone, quartzite, and limestone, but laterite or clay ironstone abounds throughout the area overlying limestone quartzite or sandstone.

The specification for the road stipulated that in flat country its width should be 40 ft. and in hilly or ridgy sections 28-30 ft., in each instance with a 16-ft. central strip of gravel. It had to withstand the passage of up to 100 vehicles daily, mainly 3-ton lorries travelling in convoys at a speed of 25 m.p.h., though some increase in private traffic due to improved travelling conditions was also to be expected. Due to the extremely friable nature of most of the soil, which throughout the long dry season is in the form of fine dust 1 ft. or more deep under traffic, it was decided that service roads on one or both sides of the final roadway were essential so that construction vehicles should not prematurely damage the surface of the new road prior to gravelling.

Details of the methods employed on each section varied. In the main, however, it may be said that power graders—in some cases assisted by tractors attached with long tow ropes—were responsible for the formation, after clearing had been done by caterpillar angledozers. On the N.S.W. section, however, most of the formation was done with auto-patrol graders, and consolidated with sheepfoot rollers. Gravelling was effected by trailbuilders clearing selected pits and heaping the material into stacks, after which Trackson loaders filled the lorries for distribution along the alignment. Some loading was, however, facilitated by "Chinaman" loading platforms with a central deck opening under which the lorries could stand for loading. Wheel scoops or angledozers drew the material on to the platform and deposited it in passing. Spreading was carried out by drawn graders and auto-patrols.

The largest waterway to be dealt with was at Newcastle Creek, where a 5,800-ft. causeway was constructed as shown in the accompanying illustration. At the 11,000-ft. flat swamp at Milner's Lagoon, formation was kept 1 ft. above flood level, and the water is passed through three 500-ft. inverts and some 9-in. pipes; 12 in. of good ironstone gravel were here used. Many creeks were crossed by fords with spawles in the bottom and roughly kerbed, and entirely covered with gravel, but two, each about 600 ft. wide, are to be constructed in reinforced concrete later. At many of the smaller creeks causeways were constructed supplemented by 18-in. pipes. To prevent accumulation of water at low spots mitre drains were cut with graders and in some cases flat causeways or Irish bridges were built, with wide drains.

Obviously, such a job relied for its success largely upon

most efficient organisation and expert maintenance of the plant. Travelling workshops and selected personnel were kept fully employed, and much credit is due to the engineers and staff responsible, as is clear from the July, 1941, issue of the Journal of the Institution of Engineers, Australia, from which also the diagrams are taken.

In view of the extremely short time available in which the road had to be completed, intensive mechanical methods with ample plant were essential, and two and in many cases three shifts during the 24 hr. were found necessary; for this purpose some of the vehicles were specially fitted with lighting plants in addition to the ordinary vehicle lights, and special floodlighting sets were installed at quarries. The following is a list of the plant provided by the three States, each for its own section:—

(a) By Highways Local Government Department, S. Australia

Four caterpillar No. 11 speed patrols with 12-ft. mechanically operated blades, dual wheel drive, equipped with head-lights and powered with a 44-h.p. 3-cyl. diesel engine.
Four Trackson "Hi-lift" loaders, fitted with 2- and 1-cu. yd. buckets and powered with a 35-h.p. diesel tractor.
Two trailbuilders, with 10 ft. by 3-ft. blades, hydraulically operated by a power take-off fitted to a D7 caterpillar tractor of 61-h.p.
Two 5-6 cu. yd. scoops, hydraulically operated, drawn by D7 caterpillar tractors.
One drawn Bulldog grader, 12-ft. blade, drawn by an ordinary caterpillar tractor.
Three 5-ton drag rollers.
Three D4 caterpillar tractors (35-h.p.), for rolling and ploughing.
Two Holman compressors, with drills and jackhammers.
Twenty-four 5-cu. yd. motor trucks—18 privately-owned, 6 departmental.
Two 1,000-gal. motor water tanks, fitted with independent 10-h.p. engines, direct coupled to 2½-in. pumps, capacity, 7,000 gal. per hr., with 3-in. hoses for filling and discharging.
One 30-cwt. Bedford truck.
Two pneumatic tyred 2-man cabins.

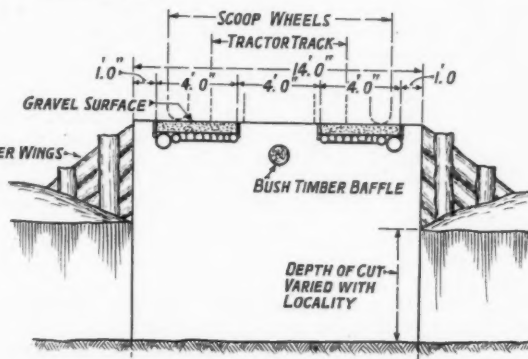
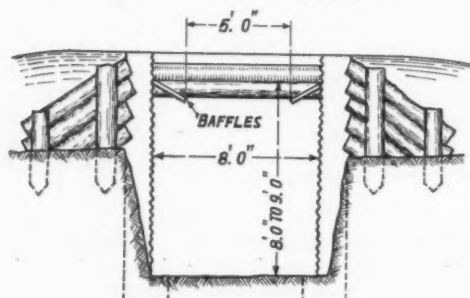
(b) By the Queensland Main Roads Commission

Three 75-h.p. D7 caterpillar angledozers.
Two 44-h.p. D6 caterpillar tractors.
Four tractor drawn graders.
One 49-h.p. KO Allis Chalmers tractor.
One 35-h.p. TD35 McCormick Deering tractor.
Eight 35-h.p. RD4 auto patrol caterpillar No. 10 graders.
One 3½-yd. Le Tourneau, pneumatic tyred, scoop.
Two 1½-yd. Gaston wheeled scoops.
One drag scoop.
Four No. 69 ploughs.
Six rippers.
Seven utility trucks.
Twenty-nine 3-ton motor trucks (privately owned).
Two 4-5-ton motor trucks (privately owned).
Two 5-ton motor trucks (main roads commission).
One travelling workshop.
Two portable electric flood lighting sets.

(c) By the Department of Main Roads, New South Wales

Two 70-h.p. trailbuilders with power rippers.
Four auto-patrol graders.
Four end-loaders.
Two 70-h.p. tractors.
Two 50-h.p. tractors.
Two 6-cu. yd. power scoops.
Two 2-yd. rotary scoops.
Two scarifier graders.
Two heavy-duty rippers.
Two sheepfoot rollers.
Two drawn rollers.
Twenty-eight 3-ton lorries.
One 5-ton lorry.
Two air compressors.
One travelling workshop.

Elevation and cross section of a "Chinaman" loading platform



Rapid Discharge by Magnet Crane

A 40-ton electro-magnet Goliath crane in L.M.S.R. service

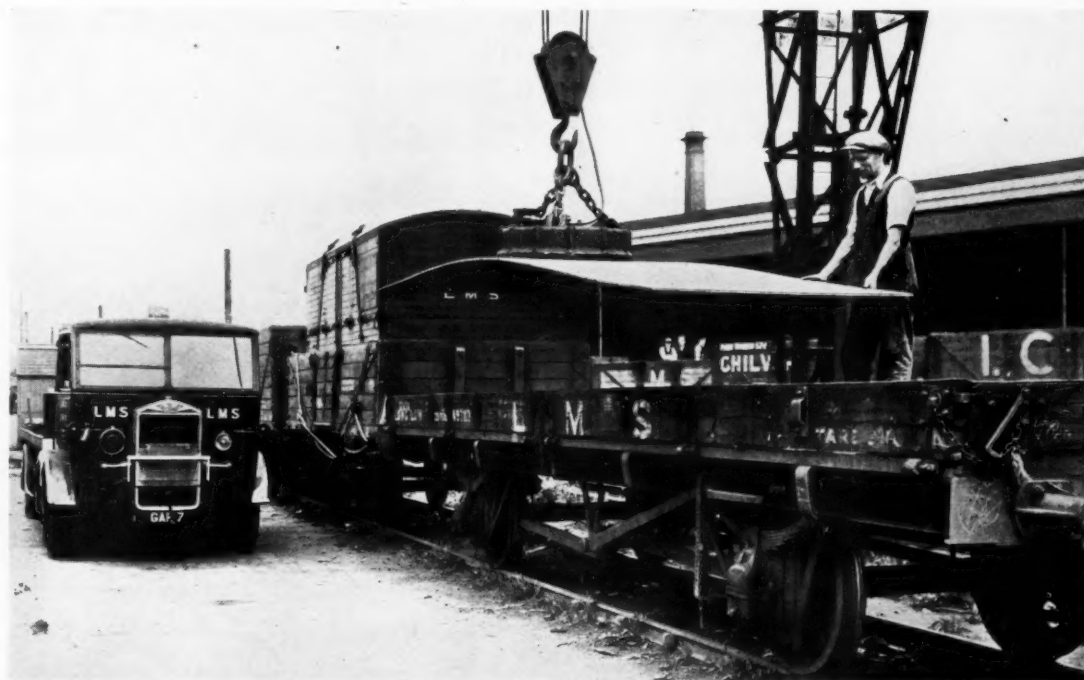
WITH a view to expediting the discharge into road vehicles of railway wagons conveying important consignments of iron and steel, an electric magnet has recently been fitted to the 40-ton electrically-operated Goliath crane in L.M.S.R. service which is shown in the accompanying illustrations. The magnet is 38 in. in diameter, is constructed of high permeability steel, and is designed for general use. The weight which it will lift varies from 7 cwt. to 7 tons, depending on the size, shape, and class of the ferrous metal to be lifted.

It is controlled by a hand-operated potentiometer controlled and is energised at 220 volts d.c. from an a.c./d.c. motor generator set mounted on the crane. The power consumption of the magnet and control gear is 4½ kW. The magnet coil is fully impregnated against ingress of moisture, and is suitable for outdoor use in all weather conditions. The flexible cable to the magnet is provided with an earth wire as a safeguard against the possibility of shock to those handling the magnet.

Such modern equipment is now in widespread use on the British railway system and its increasing introduction is but one of the many ways in which the speedier discharge, loading, and turn-round of vehicles is being effected with the object of securing the maximum use of all rolling stock.



Loading bars by magnet crane into an L.M.S.R. Leyland lorry



Electrically-operated 40-ton Goliath crane lifting sheet metal by magnet for rapid unloading into the waiting lorry

American Mobile Cranes in British Service

American-built cranes in use on the L.M.S.R. system at docks and in goods depots

A TYPE of mobile crane with a lifting capacity of $4\frac{1}{2}$ tons and a jib radius of 10 ft., which is new to British railway service, is now in use on the L.M.S.R. system and is shown in the accompanying illustrations. At present six of these American-built Bay City cranes are at work, located in dock areas and in goods depots, and a further 25 will be available shortly. This type of crane is rendering good service in speeding up the handling of freight. We recorded briefly at page 510 of our November 14 issue that a number of mobile cranes had reached this country from the U.S.A.

The cranes were supplied by Bay City Shovels Incorporated, of Bay City, Michigan, U.S.A., and were received here in parts and assembled by the L.M.S.R. As shown in the first of the illustrations on this page, for travelling the jib is anchored by hooking the block on the front bumper beam and having the front lowered from a hinge about midway along its length to reduce headroom. The back of the jib is also anchored, by grips at the back of the cab. The overall length in this position is 34 ft. 6 in. over the jib, and the overall height is 11 ft. 6 in. When the crane is in working order the overall length is 25 ft. 4 in.; the extreme width, at the rear, is 8 ft.; the total weight, as arranged for travelling, is 10 tons 15 cwt. The capacity of the crane depends on whether the load is taken on the wheels or transferred to the ground. A structure at the rear of the chassis houses a pair of joists which may be pulled out so as to rest on chocks normally carried behind the cab. A hinge



Bay City mobile crane with jib in travelling position

linked on each side connects the chassis with the underside of the roller path and this is secured by a pin so that the load is taken off the axle springs and a rigid structure between the roller path and the ground is secured.

The maximum load-lifting capacity is $4\frac{1}{2}$ tons at minimum radius; with a 10 ft. radius the capacity is 4 tons, and at a radius of 25 ft. it is 18 cwt. When the rear support is not used the lifting capacity at a radius of 10 ft. is 30 cwt. and at 25 ft. is 8 cwt. Rotation unloaded through a complete circle takes up 30 sec.; the loading speed ranges from 30 ft. to 40 ft. a min.; the height of lift at the maximum radius is 24 ft. 9 in. from hook to ground, and at a minimum radius, 11 ft. The crane is operated by a 33 h.p. 6-cylinder Hercules petrol engine with radiator cooling; transmission to the several movements is through friction clutches.



Jib at right angles to chassis



Rear view : note scotches in position

JUNCTION IMPROVEMENT ON THE SOUTHERN RAILWAY

A renewal which provided the opportunity of improving the alignment and general arrangements



IT is always the practice of the Southern Railway whenever renewals of permanent way connections become necessary, to consider carefully the possibility of making improvements within the limits of the site. The photograph reproduced above indicates a double junction which was renewed recently and which is a case in point, embodying, as it does, certain novel features introduced to improve the running of trains. The overbridge from which the photograph was taken, and which is situated exactly at the point of junction, had been reconstructed, the new design abolishing a central pier which was originally erected in the six-foot of the double line facing the junction. This made it possible to obtain a much improved track alignment for the main lines passing under the bridge and under the next bridge (which can be seen in the distance in the picture), the two tracks being slewed inwards to a standard six-foot beneath the new bridge, and suitable transition curves introduced between the reverse curves.

The alignment of the spur lines forming the junction was then arranged so that the centres of the diamond crossings in the down main line were on the point of reversal of curvature, and transition curves were introduced between the diamonds and the turnout curve and between the diamonds and the curve passing under the further bridge. In order to obtain easy divergence to the spur lines at the junction

points, "E" type switches with the standard planing length of 14 ft. 8 in., and heel chairs conforming to "D" type switches, were used, the facing pair of switches being straight-cut and the trailing pair of undercut design.

The traffic here is heavy, and, as abnormal wear had been experienced on the rails forming the junction, it was considered desirable to renew the crossings in manganese steel which, on account of its work-hardening properties, lasts three to four times as long as ordinary rail steel. To reduce the number of separate parts, cast manganese steel one-piece crossings were used. The switch and stock rails on the high sides of the curves were machined from rolled manganese steel rails, which material was also used for the closure rails between the switches and the crossings. The splayed check chairs at the facing ends of the check rails covering the crossings are, in accordance with Southern Railway practice, of the "high-speed" type which provide a slow rate of entry at the ends of the check rails.

As difficulties had also been experienced due to a soft clay formation, the opportunity was taken to blanket the clay with a layer about 6 in. thick of coarse granite powder before laying the new junction on clean stone ballast. The design, re-alignment and the other measures have saved a good deal of labour and resulted in a marked improvement of the running of trains through the junction.

DAKAR AND THE TRANS-SAHARAN RAILWAY

The transport facilities of this westernmost port of Africa and terminal of the future Trans-Saharan Railway are of the utmost importance to the Axis

THE importance of the (nominally) French West African port of Dakar continues to grow, especially from the German point of view. Its two obviously great advantages to Hitler are the facts that (1) it provides an ideal submarine and surface-raider base from which to attack all traffic from Great Britain to the East *via* the Cape—traffic which, without considerable detour, must pass through the 300 miles separating the Cape Verde Islands from Dakar—and (2) it is only 1,900 miles, or say eight hours by air, from the coast of Brazil.

But as the Germans have little prospect of being able to provide secure sea lines of communication with this port, much hinges upon its potential land communications. Hence the urgency attached to the construction of the Trans-Saharan Railway, dealt with in an editorial on page 596 in our issue of May 30 last, in which also there was a brief description of the 800-mile metre-gauge line from Dakar to Koulikoro, which will become an integral part of the Trans-Saharan route to Dakar.

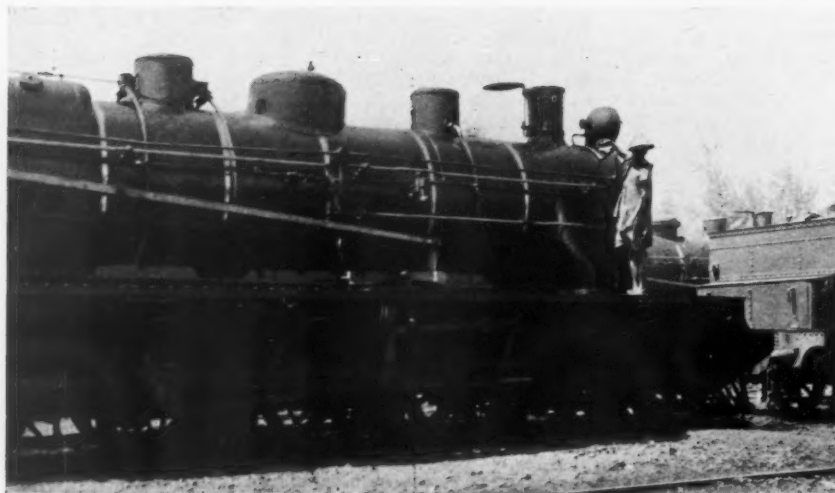
Founded by the French just 80 years ago, Dakar was linked with the Senegal river and Upper Senegal in 1885, when its first railway, 165 miles in length, was completed to St. Louis *via* Thies; this line runs roughly parallel to the coast, St. Louis being at the mouth of the Senegal river about 110 miles north-east of Dakar. This was followed by the construction of the Kayes—Bamako section, opened in 1906 as a strategic line, but it rapidly acquired commercial importance. The value of the line in this direction, however, was limited by the fact that traffic could be conveyed down the Senegal river to the coast only for some three or four

months of the year. It was consequently decided to provide Kayes with a direct rail outlet to the Atlantic, and a new line thence to Thies, connecting there with an existing route to Dakar, was built between 1907 and 1923, thus completing the main line from Dakar to Bamako, 768 miles; its 40-mile extension to Koulikoro was opened in 1933.

Whereas this second section was constructed with commercial ends in view, the military objects envisaged by the builders of the earlier Kayes-Bamako division had resulted in a line laid with light rails and severe curves over heavy gradients, and quite inadequate for dealing with modern traffic. In fact, trains worked as single units by one eight-coupled locomotive from Thies to Kayes had usually to be divided into three for the journey thenceforward owing to the severity of the route and the limited engine power that could be used. In 1925, therefore, work was put in hand upon the amelioration of the most difficult sections. Deviations were undertaken at Siguiferi, at km. 730 (from Thies), near Galougo, and at Bagouko and Dinguirah. The underlying principles were the reduction of the ruling gradient from 25 mm. to 15 mm. (or from 1 in 40 to 1 in 67), the easing of curves from radii sometimes as small as 150 m. to a minimum of 500 m., the strengthening of bridges and the substitution of standard 26-kg. rails for 20-kg.

Such measures were of local importance only and could not improve the working conditions of the line as a whole. In 1929 a programme of general reconstruction was drawn up, which included a further easing of curves and the reduction of the ruling grade to 1 in 100. The line was also relaid with 30-kg.p.m. (60 lb.p.yd.). This work had been

Right: A main-line train ready to leave Dakar for Kayes, headed by 2-8-0 compound locomotive



Left: One of the 2-8-0 compound locomotives outside Dakar repair shops

carried out as far as Mahima (113 km.) by 1934, and was completed in 1936.

Before the war there were two through trains each week between Dakar and Bamako, one an express which averaged 23 m.p.h. throughout; on it was run an International Sleeping Car Company's sleeper. As will be seen from the two illustrations—sent us by Major-General Sir James Burnett of Leys—the locomotives used on the main line are powerful 2-8-0 compounds and the rolling stock is modern; the equipment is, in fact, up to the best French Colonial standards.

The construction of a railway connecting the Mediterranean Sea with the Niger River has been discussed for many years, but the work now in progress was authorised by a Vichy law dated March 22, 1941, signed by Marshal Pétain as the Chief of the French State, and published in the *Algerien Journal Officiel* for April 18. The projected railway will have the form of an inverted "Y" with the ends of the two branches touching the Niger at Segou and Niamey, respectively, where they are to connect with the railway systems of French West Africa. The northern terminus of the railway is to be at or near Bou Arfa just within the French Moroccan boundary where there are railway connections with the Moroccan and the Algerian systems. Then the railway will pass through or near Colomb-Béchar, which is connected with Oran by a narrow-gauge railway. The line will continue from Colomb-Béchar to Beni-Abbes, Adrar, and In-Tassit. A subsequent decree dated April 9, 1941, nominated the committee entrusted with the execution of the scheme and the necessary purchase of materials. The members named were M. René Clandon, President; M. Beau, Vice-President; and M. Maitre-Devallon, Inspector-General. All are officials of the Vichy Public Works Department.

Latest information regarding the Trans-Saharan Railway proper is to the effect that in considering so vast and costly a project it was first definitely established that air and road services could not be developed so as to carry all the traffic expected (presumably from the military point of view). Estimates for a road of a capacity equal to that of a single track railway are stated to have shown a cost appreciably higher than that of a railway. The railway is to be built by extensive use of machines, the Germans insuring their availability as they are so anxious that the line should be rapidly completed; it is expected that this will be in about four years' time. It was announced on November 19 that another, but unspecified, section of the trans-desert railway from Dakar into the French West African interior had been opened.

It is now understood that the line is to be of standard



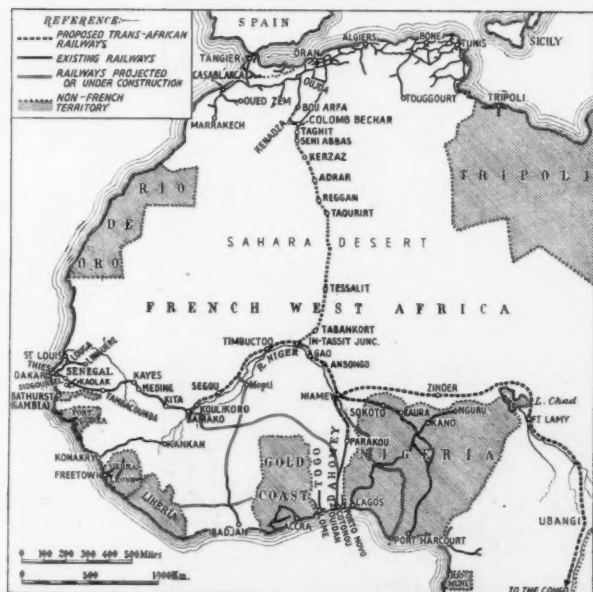
Concrete sleepers being used on a section of line under construction near Colomb-Béchar

gauge throughout, and the construction is already in progress on the first section of 200 km. (125 miles) from Colomb-Béchar southwards, although there is as yet no indication that the Bou Arfa—Kenadza* section is open to traffic. The following stations have been planned: Bou Arfa, Ain-Chair, Talzaza, Colomb-Béchar, Taghit, Bene-Abbas, Ougarta, Kerzaz, Gounars, Adrar, Reggan, Wallen, Erg-Egatalis, Tessalit, Tabankort, In-Tassit junction, and thence westwards to Timbuktu, and Segou. The eastern branch from In-Tassit will run to Gao, Ansongo, Niamey junction, and the Nigerian frontier towards Kauro, the terminus of a branch line of the Nigerian (Government) Railway. From Niamey junction another branch is to cross the Niger to Parakou, terminus of the Dahomey Railway from the port of Cotonou. Crossing places will be provided between the stations at regular intervals. Reggan is to be the principal station *en route*, with administration buildings, workshops, and stores. No provision has yet been announced for a link between Segou and Koulikoro, terminus of the metre gauge line from Dakar, and it is possible that the river is to be used between these points for through traffic so long as the railway westwards remains metre gauge, necessitating a break of gauge in any case. The ruling gradient on the whole of the line is to be 1 in 200, and it is reaffirmed that trains will be worked with diesel locomotives.

The port facilities at Dakar have probably been extensively developed since war broke out. Previously the harbour mouth was formed by two jetties, one 1½ miles and the other ½ a mile long, and the width of the entrance was 140 yd. The harbour had recently been dredged to 33 ft. depth for anchorages and there were some 7,000 ft. of quays, three commercial docks, and a dry dock to take vessels up to 600 ft. in length. There were also a naval basin and arsenal as well as limited facilities for repairs to merchant shipping. During the last year for which figures are available some 2,600 ships, totalling about 4,750,000 tons, used the harbour, discharging coal, petrol, and manufactured and miscellaneous freight, and loading groundnuts, sisal, gum, kapok, hides, and gold.

At the present time Dakar is connected with the city of Casablanca in French Morocco by a very long but quite passable road route through the Sahara Desert. In pre-war years this route was traversed infrequently, but now, according to reports from the U.S.A., a regular weekly passenger and freight service is being maintained with road vehicles equipped to run on charcoal (producer gas) or peanut oil.

* Kenadza is quite near Colomb-Béchar and the original standard gauge construction was stated to be from Bou Arfa to Kenadza, the terminus of the metre gauge line to the west of Colomb-Béchar. It may be that it has subsequently been decided to avoid Kenadza with the standard gauge, or that line may run to Kenadza and thence with a third rail to Colomb-Béchar.



Sketch map of the Trans-Saharan Railway



An excursion train run by the Taltal Railway for its staff, workmen, and their families on a Chilean national holiday. The Taltal Railway, of 3 ft. 6 in. gauge, connects the Chilean port of Taltal with Catalina on the Longitudinal railway

An interesting feature in the train shown is that the fourth and seventh vehicles are coaches of which one was put into service as long ago as 1887, and the other in the following year. They were built by the Metropolitan Railway Carriage & Wagon Co., Ltd., and cost £711 each, including freight and assembly. In a letter sent to Mr. A. J. Boyd, Managing Director of the Metropolitan-Cammell Carriage & Wagon Co., Ltd., accompanying the photograph, Mr. T. Coulson Thompson, General Manager of the Taltal Railway, states that both the coaches are still in excellent condition. One of them has been fitted recently with a compartment for a travelling postal official, and has, in addition, accommodation for 10 first class and 24 second class passengers. The other has accommodation for 12 first and 24 second class passengers.

RAILWAY NEWS SECTION

PERSONAL

The Secretary of the Department of Overseas Trade has appointed Mr. John Rodgers to be Director of Post-War Planning in the Department of Overseas Trade. Mr. Rodgers is being transferred from the Ministry of Information, where he has held the posts of Director of the Commercial Relations Division and more recently, Adviser on Overseas Planning. Mr. Rodgers' duties at the Department of Overseas Trade will be principally concerned with the investigation of the problems of United Kingdom export trade after the war.

The Ministry of Home Security announce that Major General Algernon Clement Fuller, C.B.E., has been appointed Deputy Regional Commissioner for Civil Defence. General Fuller, who was until recently Deputy Director General for Signals Equipment at the Ministry of Supply, has been assigned to the Eastern Civil Defence Region.

Mr. H. Bolton, Assistant District Goods Manager, Bristol, G.W.R., has, as recorded in our October 31 issue, succeeded Mr. Callaway as District Goods Manager, Gloucester. Mr. Bolton joined

We regret to record the death of Mr. Reginald C. Miller, Electrical Engineer, Docks & Marine Department, Southern Railway. Mr. Miller joined the staff of the London & South Western Railway in 1911 as a junior electrical assistant in the Electrical Engineer's Department, Southampton. In 1924 he was engaged on the conversion of all the pumping stations in Southampton docks from steam to electric drive, and later with electrical work in connection with the King George V graving dock and the supply of electrical power to the whole of the new dock estate. Mr. Miller later



Mr. L. J. A. Callaway
District Goods Manager, Gloucester,
G.W.R., 1933-1941

Mr. L. J. A. Callaway, District Goods Manager, G.W.R., Gloucester, has, as recorded in our October 31 issue, retired after completing 45 years of service with the company. Mr. Callaway commenced his railway career at Hele & Bradninch in 1896 and after experience at several stations and also in the offices of the Exeter and Bristol District Goods Managers was, in 1922, appointed Chief Clerk to the latter. In 1927 he became Goods Superintendent, Bristol, and during his term of office saw the complete reconstruction of the Temple Meads Goods Depot, which made it one of the largest and most up-to-date goods depots in the country. In 1933 Mr. Callaway was appointed District Goods Manager, Gloucester, the position he now relinquishes on retirement.

Mr. Revell W. Brown, President of the Lehigh Valley Railroad, has been elected Chairman of the Committee on Public Relations, Eastern Railroad Presidents' Conference.

Dr. Joseph Ward, late Chairman & Managing Director, Thomas W. Ward Limited, whose death we recorded in our August 1 issue, has left estate valued at £168,498 (net £134,780).

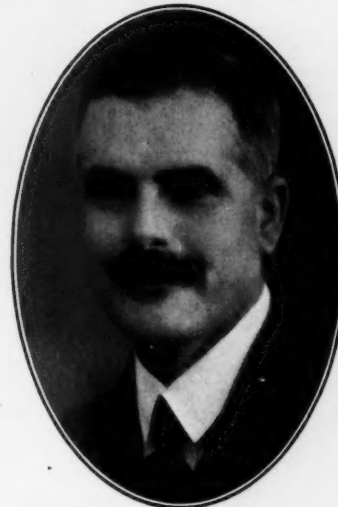


Mr. H. Bolton
Appointed District Goods Manager, Gloucester,
G.W.R.

the railway service at West Bromwich in 1904, and after gaining experience at several stations in the Birmingham District was, in 1921, selected as a trainee under the company's scheme. On completion of his training he was appointed Goods Agent at Malvern Link and in 1928 was transferred to headquarters, where he remained until 1930, when he went to New York as the company's freight agent. He returned in 1933 and became Staff Clerk in the Chief Goods Manager's Office. Early in 1936 he was appointed Chief Clerk to the Bristol District Goods Manager and shortly after was made Goods Superintendent at Bristol. Last year he was appointed Assistant District Goods Manager, Bristol.

The Minister of Supply has appointed Major Andrew Holt Adviser to the Ministry of Scrap Supply. Major Holt was in charge of transport at the Ministry of Aircraft Production before joining the Ministry of Supply last July.

Sir David John Owen has left estate valued at £50,274 (£46,822 net). Sir David, whose death we recorded in our May 23 issue, was General Manager of the Port of London Authority from 1922 to 1938.



The late Mr. R. C. Miller
Electrical Engineer, Docks & Marine Department,
Southampton Docks, Southern Railway

became Deputy to the Electrical Engineer, Southern Railway, and in May, 1940, was appointed Electrical Engineer.

We regret to record the death on November 12 of Mr. William Tait, Secretary, until last September, of the Midland Railway of Western Australia Limited. Mr. Tait, who was 68, joined the railway in 1913, and was appointed Secretary in 1919. In addition to members of the family, the funeral service was attended by many business friends, including Mr. W. Sandford Poole (Chairman), Colonel C. B. Broome (a Director) and Mr. John S. Lewis (Secretary) of the Midland Railway of Western Australia.

Mr. Kennedy Stewart, Belfast, has been co-opted a Director of the Great Northern Railway Company (Ireland), in place of the late Mr. Wickham H. B. Moorhead.

We regret to record the death on October 29, at the age of 42, of Mr. John Edwin Wood, a member of the engineering staff of the Superheater Co. Ltd.

Mr. Edward Watkin, the last General Manager of the Hull & Barnsley Railway, has left estate valued at £34,716 (net £33,016). A short biographical notice of Mr. Watkin appeared in our July 4 issue.

Railways and the War—92



A group of members of the Civilian Protective Services in Cape Town, which includes a number of railwaymen. The C.P.S. is the South African equivalent of the A.R.P. in Great Britain



One of the bridges destroyed by the Italians in their retreat from the Awash River defences. The illustration shows a wrecked railway bridge on the Djibouti to Addis Ababa Railway which spans a ravine 200 ft. wide. Reference to the restoration of traffic on this line is made at page 566

TRANSPORT SERVICES AND THE WAR—117

Volunteer conductors at Liverpool—Railwaymen's gallantry—Air raid damage to King's Cross station, L.N.E.R.—The work of the South African Railways Battalion in East Africa—The world fuel position

The scheme of the Liverpool Corporation Passenger Transport Department to use regular passengers on trams and buses to help as auxiliary conductors during rush hours, which came into operation on October 8, has already been recorded in these columns, notably at page 421 of our October 24 issue. By courtesy of Mr. W. G. Marks, the General Manager, we are now able to reproduce a specimen of the auxiliary conductor's permit card and also of the brassard bearing a white metal badge by which these



Above: The brassard bearing a white metal badge issued to auxiliary conductors by Liverpool Corporation Passenger Transport Department

No.
LIVERPOOL CORPORATION
PASSENGER TRANSPORT DEPARTMENT.

AUXILIARY CONDUCTOR'S PERMIT CARD

Issued to
of.....
.....

and entitling him to carry out Conductors' Platform Duties in accordance with Regulations as follows:—

Route No.
Hours: Week-day Mornings up to 9.30 a.m.
Evenings (Mon. to Fri.), 4 p.m. to 7 p.m.
Afternoon (Sat.), 12 noon to 1.30 p.m.

W. G. MARKS,
General Manager.

24 Hatton Garden,
Liverpool, 3.

Holder's Signature

Right: The permit card, which has to be produced on request to Corporation officials

auxiliary conductors are identified. Passengers volunteering were invited to fill in an application form giving their name, address, occupation, employer's name and address, a statement of any physical disability, and the regular journeys made, with times of departure. Those volunteers accepted are given a list of instructions and platform duties. The former states that journeys on duty may be made only on the route named on the permit card and only between the hours printed thereon; that when travelling on duty the official armband has to be worn, and the permit card produced to a Corporation official on request; that only one auxiliary conductor may take up duty on a vehicle at a time; and that he must advise the regular conductor of the point to which he proposes to travel. When on duty the volunteer auxiliary must travel on the rear platform and take over the rear platform duties of the regular conductor, at all times working under the direction of the latter. In the event of accident the auxiliary conductor must advise the regular conductor at once so that the usual procedure may be carried out. Fare collection is the duty of the regular conductor and, if an auxiliary collects a fare from an alighting passenger, he must hand it over to the regular conductor

as soon as possible for the issue of a ticket. The auxiliary is not permitted to alter the destination indicators of the vehicle.

An auxiliary conductor is allowed to travel without payment of fare when on duty, and his platform duties consist of controlling the loading and unloading of the vehicle and giving the customary bell signals to the driver as follows:—

- 1 bell ... Stop at next stop.
- 2 bells ... Proceed.
- 3 bells ... Car full.
- 5 bells ... Emergency signal. Danger. Stop at once. The emergency signal must be given in all cases where danger would be averted or minimised by a sudden stop.

Further duties of the auxiliary conductors are to control the trolley-rope and make sure that it is correctly positioned; and to call out the name of a point as it is approached, and the destination of the vehicle when at a stopping point, particularly during the hours of darkness.

Early in November the general manager sent a notice to all persons engaged as volunteer auxiliary conductors inviting them to assist on any tram route at any time during the day, and on the tram or bus routes named on their permit card at any hour of the day (Sundays included) if the loading conditions warrant such assistance. Mr. Marks took the occasion to express his appreciation of the work which is being performed by these volunteers.

Air Raid Casualties in October

The Ministry of Home Security has announced the following figures of civilian casualties due to air raids in the United Kingdom during the month of October:—

Killed (or missing and believed killed) ..	262
Injured and detained in hospital ..	361

The casualties are classified as follow:—

	Men	Women	Under 16
Killed or missing ..	136	92	34
Injured ..	186	129	46

During the month of October, 1940, 6,334 civilians were killed and 8,695 were injured and detained in hospital.

Awards to Railwaymen for Gallantry

The *London Gazette* of November 14 recorded awards to no fewer than 18 members of the staffs of British railway companies for daring work during enemy air attacks on docks, sidings, and so forth. In addition notice was given of 34 railwaymen who were commended for brave conduct in Civil Defence. Among those who were awarded the George Medal were *Stephen Robert Jeeves, Bodymaker's Assistant, Southern Railway Company*, who is now serving as an ordinary seaman in the Royal Navy. When a large number of incendiary bombs fell on and around a railway station and inspection sheds in which were six box wagons loaded with anti-aircraft shells and bombs, Jeeves led an attempt to subdue the blazing trucks of exploding shells which caused explosions in other wagons. The flying metal from the exploding shells made the isolation of the blazing wagons a dangerous task, and one of two volunteers with Jeeves was fatally injured by shell fragments. Jeeves carried on but was eventually forced to give up owing to failure of the water supply. He then helped to deal with the various fires which had broken out nearby.

Fred Potter, Wagon Examiner L.N.E.R., who also received the George Medal attempted to remove a burning tarpaulin sheet from one of several valuable timber stacks which had been fired by incendiary bombs. The heat of the fire caused the sheet to adhere to the timber and he was unable to lift it. There was no water available, but with sandbags and ashes Potter extinguished fires which had started in other stacks, and then fetched four lengths of fire hose from an auxiliary fire station 400 yards away, and alone attacked another fire. Later high explosive bombs fell on stables nearby and Potter removed sufficient of the debris to enable him to rescue five horses. He then saw that the wooden decking around a coal hoist was on fire and, improvising a rope from a number of sheet strings, drew water from the dock in buckets and extinguished the fire, thereby saving the hoist from destruction.

Awards of the George Medal to *Robert Hume, Yard Inspector*, and *John Steel, Driver*, and of the British Empire Medal (Civil Division) to *Jonathan William Angus, Acting Class III Shunter*, *Charles Colthorpe, Yard Inspector*, and *Robert Stephen Ward*,

Acting Yard Inspector all of the *L.N.E.R.*, have been made for work done during an air raid upon a docks when incendiary bombs were dropped on and around the sidings containing stacks of pit props. The sidings also contained 300 wagons, some loaded with ammunition; seven wagons were set alight at different points. Hume was in charge of work in the sidings and he, with Colthorpe, Steel, Angus, and Ward extinguished a number of incendiary bombs, and then decided to remove the wagons to a safer area. No fewer than 274 wagons were moved, and of the remainder only one was burnt out.

Awards of the George Medal to *George Roberts, Goods Guard*, and of the British Empire Medal (Civil Division) to *Peter Kilshaw, Goods Guard*, and *James Edward Rowland, Goods Guard* of the *L.M.S.R.*, have also been made when a bomb fell on a train of munitions in an old siding. Roberts, accompanied by Kilshaw and Rowland, made an inspection of the siding and uncoupled wagons which were in danger of burning. During the whole of the time the men were engaged on this work explosions were occurring in the munitions train, and high explosive bombs were falling nearby.

The British Empire Medal (Civil Division) was also awarded to *George Brown, Assistant Traffic Agent, L.N.E.R.*, who while off duty noticed a blaze in the direction of a dock and after cycling from his home found that incendiary bombs had been dropped in large numbers. With the assistance of other staffs, and although high explosive bombs and shrapnel were falling nearby, he continued to extinguish incendiaries, until a high explosive bomb demolished a chimney 30 yards away. The blast and debris injured three of the party, and Brown gave first aid to the wounded; he then helped to put out fires in wagons loaded with ammunition.

Francis William Clarke, Parcels Porter, L.M.S.R., has been awarded the British Empire Medal (Civil Division); when a signal box was demolished by a high explosive bomb the signalman was injured and buried beneath burning debris; he managed to extricate himself and his cries were heard by Clarke. Although Clarke is only 5 ft. 3 in. in height he got the signalman on his back and carried him towards the station. In the darkness Clarke became entangled with some wires and fell with the casualty on top of him; he recovered and started out again but was knocked down by the blast of a high explosive bomb. Although almost exhausted Clarke struggled on and got the injured man to a first aid post.

The British Empire Medal (Civil Division) has also been awarded to *William Thomas Flegg, Acting Temporary Stationary Machinery Attendant, L.M.S.R.* (now serving as a Refrigerator Greaser in the Merchant Navy) who, when incendiary bombs were dropped on station shunting premises immediately helped to dispose of the bombs and to get a hose playing on a straw shed which was on fire. He then saw a bright light in the windows of a warehouse; to reach the top floor Flegg in the dark had to find and negotiate three iron ladders with a trap door at the top of each. He got to the top storey, but before he could deal with the bomb it burnt through the floor and dropped on to the fourth floor below, near a large stack of paper. Although Flegg was in danger of being trapped in the burning room he succeeded in putting out the fire.

The British Empire Medal (Civil Division) was awarded to *George Herbert Fowell, Casual Shunter, L.N.E.R.* Fowell, with other members of the staff, fought a fire, at a wooden building used as an office, caused by a number of incendiary bombs in a railway yard, and progress was being made when the water supply was cut off. On rails less than 4 ft. away from the burning hut were two brake vans and four loaded petrol tanks. The brake vans were soon burning, and the petrol tanks were liable to explode. An engine was obtained and coupled on to a rake of 32 wagons which were backed to the petrol tanks; Fowell uncoupled the petrol tanks from the two burning brake vans and coupled them to the wagons and engine to enable them to be drawn to a place of safety.

The British Empire Medal (Civil Division) has been awarded to three members of the Southern Railway Staff, *Henry John Gardner, Engine Driver*, *Ernest Newham, Station Foreman*, *Albert Victor*

EMERGENCY ARRANGEMENTS

In case of National Emergency, official information will be posted HERE. At such times other notices on this Station may be false

Top of a British railway poster with blackboard surface to bear chalked announcements in emergency. The heading is in red



TO TRANSPORT USERS

To move munitions, to distribute food, to clear imports promptly, Britain needs at least 100,000 extra wagons and lorries. They can't be built, they can be found—by you.

HOW?

By tightening up your organisation from office to loading bay, to get a Quicker Turnround of the wagons and lorries you use; by reducing delays between arrival and unloading; by installing every possible labour-saving device, improvising if you must; by inviting suggestions from the men on the job; by making the fullest use of your powers of planning; by fearless unorthodoxy if needs be. But you must Act Now.



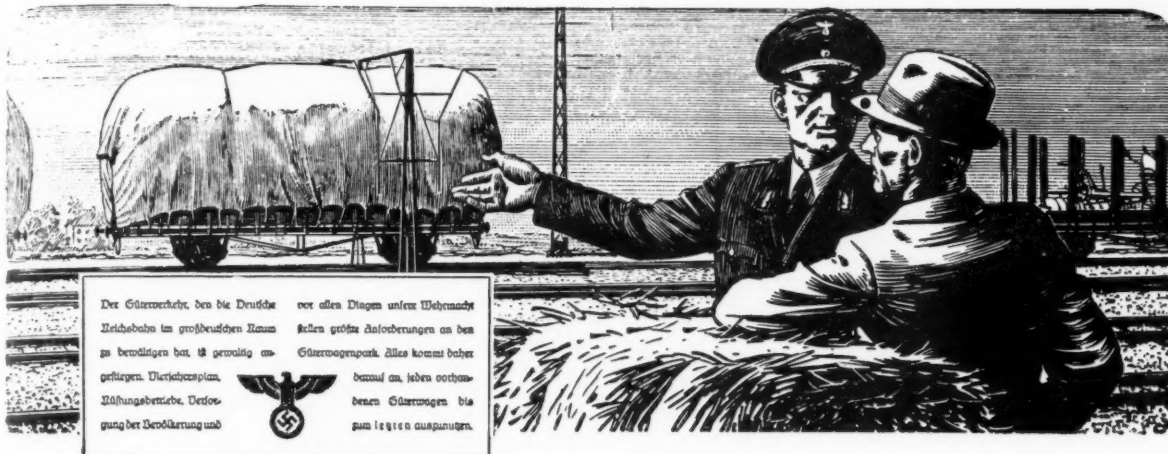
Issued by the Ministry of War Transport.

Newspaper advertisement issued by the Ministry of War Transport in connection with the "Q" campaign

Newman, Locomotive Fireman. Newham, after helping to put out incendiary bombs saw that a nearby factory was alight and knowing that five wagons of explosives were included in the freight train stable close to the fire he, with assistance, separated the wagons, and pushed a number clear of danger. Newman and Gardner volunteered to work the engine and all the wagons were drawn out; the burning trucks were placed under a water crane. Newman then climbed on top of the wagons to ascertain that all fires were extinguished.

The British Empire Medal (Civil Division) has also been awarded to *William Henry Runicles, Carpenter, L.N.E.R.* When bombs set fire to buildings, the roofs of which collapsed, an incendiary bomb fell on an injured man who would have been fatally burned had not Runicles, with his bare hands, removed the smoking and red hot bomb. Although his right arm had been severely burned, Runicles extricated four men who had been buried under the debris, and also extinguished several other incendiaries.

The British Empire Medal (Civil Division) has been awarded to *Albert Edmund Wright, Passed Fireman, L.M.S.R.*, who led a rescue squad when high explosive bombs completely demolished office buildings at a goods yard when four members of the staff were killed and seven injured. The squad found a man injured and trapped in the wreckage; his head had been wedged between heavy beams of the roof which had collapsed. There was a great danger of further injury to the man and Wright crawled under the



Der Güterverkehr, den die Deutsche Reichsbahn im großdeutschen Raum zu bewältigen hat, ist gewaltig an gestiegenen Verkehrsleistungen, auf die sie sich für jeden Verkehrsfall, den Wagenverlauf so zu regeln und einzustellen, daß eine voll ausgelastete Wagenladung für jeden Bestimmungsort zusammenkommt.

Schon vor Beginn der Verladung empfiehlt es sich, die Unterbringung der Güter im Wagen genau zu berechnen. Auskünfte über die Abmessungen der Güterwagen geben alle Güterabfertigungen. Zweckmäßig gewählte Verpackung, Einbauten aus Latten und Brettern - das alles kann zur sicheren und raumsparenden Verladung beitragen. Besonders wenn es sich um sperrige Güter handelt, zeigt sich der Meister im Ausnutzen des begrenzten Laderaumes. Hier kommt es auf zweierlei an: Auf den bestmöglichen Einfluß der mechanischen und menschlichen Missetate und auf engste Zusammenarbeit mit den Güterabfertigungen. Das bedeutet eine wichtige Hilfe für die Deutsche Reichsbahn bei der Überwindung der Verkehrsbeschwerden.



Auf jeden Kubikmeter kommt es an!

Jede planvolle Expansions an Wagentraum bedeutet eine Vermehrung des zur Verfügung stehenden Wagenbestandes. Und jeder einzelne Verfrachter hat dazu den Vorteil, daß bei besserer Wagenauslastung die Fracht nach niedrigeren Frachtklassen berechnet wird. Deshalb lohnt es sich für jeden Verfrachter, den Wagenverlauf so zu regeln und einzustellen, daß eine voll ausgelastete Wagenladung für jeden Bestimmungsort zusammenkommt.

Schon vor Beginn der Verladung empfiehlt es sich, die Unterbringung der Güter im Wagen genau zu berechnen. Auskünfte über die Abmessungen der Güterwagen geben alle Güterabfertigungen. Zweckmäßig gewählte Verpackung, Einbauten aus Latten und Brettern - das alles kann zur sicheren und raumsparenden Verladung beitragen. Besonders wenn es sich um sperrige Güter handelt, zeigt sich der Meister im Ausnutzen des begrenzten Laderaumes. Hier kommt es auf zweierlei an: Auf den bestmöglichen Einfluß der mechanischen und menschlichen Missetate und auf engste Zusammenarbeit mit den Güterabfertigungen. Das bedeutet eine wichtige Hilfe für die Deutsche Reichsbahn bei der Überwindung der Verkehrsbeschwerden.

Hilf der Deutschen Reichsbahn und Du hilfst Dir selbst!

Beachten Sie diese 10 wichtigen Regeln für den Verfrachter!

1. Güterwagen schnellstens be- und entladen. Abgabe der Wagen möglichst vor Ablauf der Ladefristen; Überschreitung der Ladefrist hat Ausfall des gesamten Laderaumes zur Folge.
2. Wagen richtig und voll für den wirtschaftlichen Bedarf beladen. Angenehme Frachtmengen vermeiden, selbst wenn kleine Unbequemlichkeiten damit verbunden sind.
3. Diebstahls- und Abfuhr der Güter. Mit der Be- und Entladung (möglichst nach Wagenverteilung) beginnen.
4. Für Güterwagen gibt es jetzt keine Sonntagsruhe. Daher Güter, wenn möglich, auch Sonntags verladen. Für eingepackte Güter besteht die Pflicht zur Einladung an Sonntagen.
5. Güterwagen beim Be- und Entladen nicht beladungsfähig inhalten. Güter ordnungsmäßig und bereitwillig verladen.
6. Durch geschultes Ladepersonal und Hilfsmittel das Be- und Entladen erleichtern.
7. Auslastung der Wagen bis zum Ladegewicht und nach Möglichkeit jege im innerdeutschen Verkehr bis 1000 kg über die Tragfähigkeit. Raumersparnis durch geschickte Stapelung der Güter, ganz besonders durch festgelegte und übersichtliche Verladen der Güter.
8. Nicht mehr Güter zu gleicher Zeit beladen, als rechtzeitig entladen werden können.
9. Einladung möglichst beim Einzug der Verladung des Abnehmens oder bei der Demontage durch die Güterabfertigung vorbereiten. Führer und Ladepersonal schon im voraus für die Zeit der bevorstehenden Einladung instruieren.
10. Frachtdokumente und sonstige Begleitpapiere sorgfältig ausfüllen zur Vermeidung von Irrtümern.

Diese Vorschriften, aufpassen und immer wieder lesen!

The fifth of the German State Railway freight traffic advertisements

debris to protect him; he remained attending to the casualty for three hours before it was possible for the rescue squad to release him.

Air Raid Damage to King's Cross Station

The main-line booking office at King's Cross station, L.N.E.R., which was demolished some months ago when a bomb hit the office buildings adjoining the famous No. 10 platform, was reopened on Monday, November 17. The bomb fell during a heavy raid in the early hours of a Sunday morning and it may now be revealed that four firewatchers, a dining car attendant, and seven soldiers on duty in the R.T.O. office were killed; several other railwaymen had narrow escapes. The bomb exploded inside the building and brought down the grill room and bar and some offices above, and wrecked the adjoining booking hall. Two sailors buried in the wreckage of a cloakroom were extricated unhurt, and soldiers' kit in a military cloakroom was scattered over a wide area. Although tons of debris fell into the dining car stores underneath the bar and grill room, the crockery of the Silver Jubilee and Coronation expresses, stored there in crates, was undamaged. No. 10 platform, the main departure platform, was out of action while the debris was cleared away and part of the actual platform resurfaced, but despite this dislocation not a single train was cancelled. A large part of one of the roof arches fell and debris was flung over three or four platforms smashing a van of a newspaper train and a pilot engine, but no one was hurt here. Beneath the hole in the roof temporary platform covers are being erected, but the main roofing is not expected to be rebuilt until after the war.

Two of the operating difficulties resulting from this bomb damage were speedily met by emergency provisions, which formed the subject of illustrations at page 416 of our October 24 issue. The demolition of the main-line booking office resulted in the scattering or destruction of millions of tickets so that it was necessary not only to make provision for booking but also to provide emergency tickets. The Georgian tearoom at King's Cross was converted into an emergency booking hall, and was in operation by the next Tuesday; 7,000 blank card tickets were issued while new ones

were being printed. Provision for light refreshments was made in a buffet car placed at the buffer stops of the main departure platform, No. 10.

Freight Traffic in Germany

This week we reproduce the fifth of the series of advertisements issued by the German State Railway to encourage maximum use of available freight space:—

EVERY CUBIC METRE IS OF MOMENT

Every planned saving of wagon space means an increase in the number of vehicles available. And every individual consignor has, moreover, the advantage that lower rates of freight will be charged when wagons are better used. It therefore pays every consignor to regulate and adjust the running of wagons so that a fully loaded vehicle arrives at every place of destination.

It is advisable, even before beginning the loading, to calculate with precision the stowage of the goods in the wagon. All goods depots will furnish information as to the dimensions of the vehicles. Suitably selected packing, and fitting of laths and boards, all helps to ensure safe stowage and secure a saving of space. This applies more especially when with bulky goods, for which it is of supreme importance to use to the full the space paid for. In such cases two points are of importance: To make the best possible use of mechanical and manual labour, and to work in close co-operation with the clearance depots. This means an important help to the German Reichsbahn in surmounting transport difficulties.

Help the German Reichsbahn and help yourself

The South African Railways Battalion in East Africa

The South African Railways & Harbours Battalion did yeoman service in the recent East African campaign. It consisted of Railway Construction Companies, a Harbour Construction Company, and a Survey Section, drawn mainly from the S.A.R. & H. In January last, the Survey Section under Major Evans, and Major Pauling's Construction Company left the Union and proceeded to locate and build a line in Kenya to serve the advance of the East African Force towards Kisimayo and Mogadiscio. This line was, however, ordered to be discontinued shortly afterwards.

The Harbour Construction Company assisted at the landings at those ports, and reconstructed the port facilities after the occupation of Mogadiscio. Major Pauling's company then took charge of the railway thence to Villaggio, 50 miles, and here a large

steel bridge, demolished by the retreating Italians, had to be rebuilt. The foundation piles for the new timber trestle structure were driven in eight days by a section of the Harbour Company, and the superstructure was completed by a S.A. Engineer Corps Field Company.

After the capture of Berbera, it became the principal port for supplying the Force, and the Harbour Company was kept busy there. When the advance reached Dire Douah on the Djibouti-Addis Ababa railway, it was found that the workshops had been dismantled, all the locomotives put out of action—mainly by having their cylinders cracked by explosive charges or sledge hammer blows—and a Mechanical Section of one of the companies did good repair work on them, and reconditioned wagons and converted some from open to covered type. The Italians had removed machine tools and all the engines and stock they could to the capital before the demolition of the Awash bridge, so that every improvisation and repair possible was carried out by our troops to equip the section east of that bridge.

Heavy Repairs on the Dire Douah-Djibouti Section

The demolition of this big bridge necessitated, at first, transhipment by lorries assisted by a section of one company, and on the Dire Douah-Djibouti section two major bridges had to be rebuilt, by Major Evans's company. In one instance three 75-ft. spans and two piers of a seven-span bridge were blown up, and in the other a 120-ft. through bowstring span lay a tangled mass of steel in the river bed, well away from the centre line. It was replaced by three 40-ft. plate girder spans on piers built in the bed. A 500-ft. tunnel on this section was also blocked for 90 ft. in its centre, where also there was a great cavity caused by explosion, extending to 40 ft. above rail level. The reconstruction and relining of this tunnel were completed within a period of four weeks.

Awash River Deviation and New Bridge

Meanwhile, the Awash bridge—roughly in the centre of the Dire Douah-Addis section—which had consisted of a central 160-ft., and two 140-ft. spans carried on steel trestle piers and stone abutments, at a height of 200 ft. above the river bed, lay completely destroyed. A deviation was decided upon and the Survey Section set out to survey it forthwith. A 3½-mile alignment with 1 in 30 gradients and 10-ch. curves was located, enabling the river to be crossed at a much lower level, ¼ mile above the old bridge. The new main span, 120 ft. in length, was built of steelwork cut out of the original structure and hauled over a service road to the new site. Subsidiary 60-ft. and 30-ft. spans completed the bridge on the deviation.

In this 3½ miles of line there are heavy rock cuttings, high banks, and concrete culverts, the construction of which was carried out by Major Evans's company. The whole work, including the new bridge and platelaying, was completed in the remarkably short time of eight weeks, despite heavy casualties due to severe malaria, heat-stroke and other climatic disabilities. On the Awash-Addis section there was only one demolished bridge to be replaced and the line was otherwise virtually intact. It was also well supplied with engines and rolling stock. During this campaign the Battalion Headquarters under Lt.-Colonel D. E. Paterson, M.C., were first at Mogadiscio, then at Berbera, and finally at Dire Douah. (See illustration on page 562.)

South-East African Road Improvements

In order to improve land communications between South and East Africa, the War Office has decided to reconstruct the road from the Union and the Rhodesias through Broken Hill, Mbeya, and Dadoma (both in Tanganyika), Nairobi and Marsabit (in Kenya), to join up with the Abyssinian road system at Neghelli. Actually, the section from Nairobi northwards has already been taken in hand since the East African campaign closed. The road in its improved form is expected to be of great value not only strategically, but also for administrative and trade purposes, and it will be so surfaced as to stand up to the worst rainy season conditions.

Merchant Shipping Repairs in South Africa

All merchant shipping repairs will in future be under the control of the South African Railways & Harbours. The General Manager, Mr. C. M. Hoffe, in a recent statement said: "South Africa is in a key position as to shipping, and the Government must go all out to provide all the assistance it can. The quicker ships are repaired and out of the harbours, the more traffic the harbours can handle." Continuing, he pointed out that ship-repairs had been treated as Priority No. 1 and man-power for repair work would have to be made available. The S.A.R. & H. administration had found it necessary for the control of the ship-repairs to be taken over if all the services were to be co-ordinated and keyed with Government workshops. The administration will act in conjunction with repair firms in Durban, Cape Town, Port Elizabeth, and East London. The new Controller of Ship-Repairs will be Mr. W. H. Waudby, formerly Mechanical Engineer, Pretoria, S.A.R. Previous to the taking over by the administration, the repair directorship

was responsible to the Merchant Shipping Control Committee under the Department of Commerce & Industries.

Road Transport in France

In view of the severe shortage of motor fuel, more stringent control of road motor traffic is being introduced all over France, in both the unoccupied and occupied zones. Gradual introduction by Departments has been adopted, it is explained, with a view to adapting the new measures more easily to the varying conditions prevailing in the various parts of the country. A new organisation has been formed under the title of the Service de Répartition des Transports Routiers; it is under the management of the Road Transport Administration of each Department. Road motor operators are free to render transport services to industry or trade, but must compulsorily register with the new Service, which acts as a traffic exchange and a central distribution or allocation office. Operators are compelled to carry out the instructions of the Service, so as to secure the greatest use of the available freight space and to avoid empty return trips. The directions issued by the Ministry of Communications envisage the closest co-operation between neighbouring Departments, so as to "rationalise" long-distance road motor services.

The World Fuel Position

The seriousness of Italy's shortage of motor fuel is emphasised by the recent order of the General Inspectorate for Civilian Traffic prescribing the "combing" of the driving licences for motor lorries up to 1.2 tons capacity. Licences will not be renewed unless it is proved that the vehicle is operated in the national interest, and no new licences are to be issued. Even the use of vehicles driven with "autarcic" fuel, such as Italian- or Albanian-produced methane gas, is to be restricted to the bare minimum.

All the buses of the Southport (Lancashire) Corporation are now operated on a creosote-fuel oil mixture, and an extra 2,800 miles a week are run by the whole fleet through this introduction of about 30 per cent. of creosote into the mixture. Recent English municipalities which have taken up the question of gas and producer-gas buses are Blackpool and Harrogate.

Carbide-gas generators for light lorries and private cars were put on the market in Denmark some months ago, at a cost of about kr. 1,000, plus an installation charge of kr. 150/200. In Sweden there were 774 road vehicles running on acetylene, methane, town gas and electric power, on May 1 last, but on the same date there were 51,446 registered vehicles running on producer gas, of which 39 per cent. used wood fuel. In Stockholm alone there were 7,246 such vehicles, and in Sweden as a whole producer-gas propulsion has actually been applied to 143 motorcycles.

In Germany, the *Reichsautobahnen*, or National Motor Roads, will shortly be equipped with service stations for the supply of chipped wood to producer-gas vehicles, according to the *Reichsautobahn Kraftstoff G.m.b.H.* (National Motor Roads Fuel Company). It is reported that 22 wood stations were opened between Berlin and Dresden in May, 1941, in connection with established petrol-filling stations. Additional wood-fuel stations are to be put into operation between Berlin, Breslau, Darmstadt, and the Chiem lake.

The producer-gas vehicle law in Brazil, which requires that owners of 10 or more vehicles have one in every 10 equipped for the use of producer gas, went into effect on July 15, 1941, in the Federal District, State of Rio de Janeiro, São Paulo, Paraná, and Santa Catharina, in compliance with the resolution of January 15, 1941. For the time being the law is limited to lorries. Owners not complying with the law will be fined, and not be permitted to function. A factory to manufacture producer-gas apparatus has been built in Bello Horizonte.

Motor vehicles in Sweden are being converted for the use of producer gas; between September 1 and 15 some 1,300 were converted, which brought the total up to 67,697. Of these 40 per cent. are using wood gas. The distribution was 37,638 lorries, 26,421 private cars, and 3,638 buses.

Goods Rate Increases in Spain

It was officially announced recently that goods rates on the Spanish National Railways would be increased by 25 per cent. from November 1. Subsequent information indicates, however, that the increases were applied on October 23, and that the rates for certain classes of foodstuffs were increased by 5 per cent. only.

Proposed New Central European Canal

Plans for a new canal linking the River Danube with the Adriatic were announced on the German radio recently.

Bolivian Railway for Military Training

The metre-gauge railway from La Paz to Los Yungas, 34 miles, which was operated by the administration of the Arica-La Paz Railway as a part of the Bolivian State Railway system, has now been handed over to the General Pando Battalion, to be worked for training purposes by the military authorities.

Ministry of War Transport Accident Report

Dolphin Junction, Slough, G.W.R., July 2, 1941

Major G. R. S. Wilson inquired into the accident which occurred at about 2.55 a.m. on July 2, 1941, at Dolphin Junction signal box, 17½ miles from Paddington and about a mile east of Slough, when the 1.30 a.m. freight train, Old Oak Common to Severn Tunnel Junction, composed of 62 wagons and a 20-ton brake, weighing 630 tons, drawn by L.M.S.R. 2-8-0 locomotive No. 8293, left-hand drive (on loan to the G.W.R.), running at 15 to 20 m.p.h., passed the down relief home signals at danger and collided head-on at the diamond crossing with the 6.20 p.m. up express from Plymouth, composed of 8 bogie corridor coaches, screw-coupled, weighing 239 tons, drawn by 4-cylinder 4-6-0 locomotive No. 4091, *Dudley Castle*, which had just started from the up main home signals and was being diverted from up main to up relief through the left-hand crossover junction. Five passengers were killed, three of them Naval ratings, and five—all Naval ratings—and the freight train driver seriously injured. Nineteen other persons suffered minor injuries. Considerable damage was done to the locomotives, and the freight engine tender was forced up to an angle of 45 deg. by the eight leading wagons, the wreckage of which was piled beneath. The passenger engine was driven back 4 yd., and the shock was mainly absorbed by the telescoping of the two leading coaches for about two-thirds of their length. The front end of the leading coach was crushed against the tender for the length of the lavatory compartment. The remaining coaches suffered comparatively trivial damage. The combined speeds of the two trains may have been as high as 30 to 35 m.p.h. Traffic was restored on all lines affected in less than 21 hours. Rescue work was promptly undertaken by the railway staff, local A.R.P., Home Guard and other bodies, with doctors and nurses, and the report specially mentions outstanding work performed by Naval ratings and soldiers. The night was dark and oppressive, but clear. The accompanying diagram shows the lines and signals immediately involved and certain other relevant details.

Origin of the Collision

The account given of his actions by Signalman Welch, Dolphin box, was somewhat confused. He said that at 2.38 a.m. he accepted a Government stores train on the up main, and about 2.46 a.m. was notified from Slough that the Plymouth train, which was running 32 min. late, had left Reading at 2.32 a.m. He telephoned to Signalman Woodhouse, Slough East, to ask for any information regarding the relative running of the two. In the meantime Welch had accepted the freight train on the down relief, and had it accepted by Woodhouse at 2.46 a.m. but, as he maintained throughout his evidence, lowered no signals for it, then or at any time. At 2.49 a.m. the stores train passed and he accepted the Plymouth train, keeping the up main signals at danger. He had become concerned lest it might be further delayed by the stores train, which by the time he knew of the position of the express it was too late to divert to the up relief. He began enquiring about the position ahead on that line, although he knew that no train had passed on it for well over an hour. He said he first offered the Plymouth train on the up main to Signalman Adams at Langley and had it accepted, but

cancelled it later. (Adams said that this never took place at all.) He then got it accepted at 2.53 a.m. on the up relief, by which time it was standing at the up main home signals, and received "entering section" for the down relief freight. He further declared that in due course he watched the headlights of the latter approaching for about half a minute and assured himself, as he thought, that it had come to a stand, after which he set the junction from up main to up relief and lowered the relevant signals. He was watching from the centre of the frame and

having risen above 4 m.p.h. when he saw the lights of the freight; he shut the regulator but had no time to apply the brake.

Driver Clay, of the freight, left Old Oak Common 45 min. late and had made up 4 min. by the time of the accident. He maintained that the Dolphin down relief distant was at clear when he first saw it and that he was taken completely by surprise when he sighted the home signals at danger at 300 to 400 yd., concluding that the signals had been reversed on account of some emergency ahead. He promptly closed the regulator and applied the steam brake which took some seconds to become fully effective, owing to condensation. He thought speed was reduced to 15 to 20 m.p.h. by the time of the collision, and he recollected nothing of the Plymouth

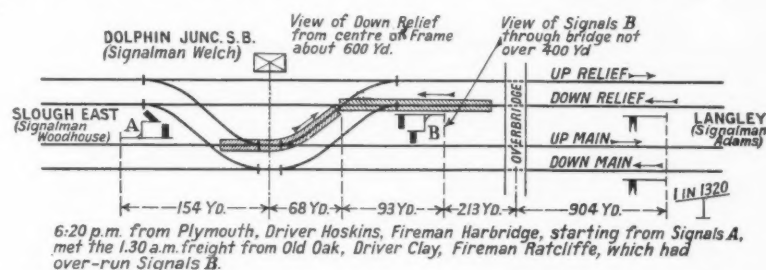


Diagram showing collision at Dolphin Junction, Slough, G.W.R., July 2, 1941

admitted that he could have seen the lights at only about 500 yd., although at first he said he could do so at 800 to 900 yd. The Plymouth train started at once and "drew away smartly." Watching it cross the junction, he noticed that the headlights of the freight were still on the move and realised his "serious mistake." He emphatically denied that he had lowered and then reversed the signals for that train. He had also dealt with a freight train which passed on the down main at about 2.53 a.m., but could not say whether he replaced his signals promptly behind it. When the collision occurred he sent "obstruction danger" promptly in both directions.

Driver Hoskins, of the Plymouth train said he stood at the up main signals 1½ to 2 min. and started gently, his speed not

train. His knowledge of the road was not in question. He had driven this class of engine on ten previous occasions and referred to the good look-out from the left-hand side. He always made a point of looking for the Dolphin distant when passing Langley, as the gradient was falling and it was necessary to shut off steam before passing the A.T.C. ramp, to ensure stopping at the home signals. He knew the engine had no A.T.C. equipment, but felt no handicap on that account; he regarded the A.T.C. reminder as secondary to signal observation. His speed passing Langley might have been about 30 m.p.h., as usual. After assuring himself that the distant was off, he crossed the footplate to supervise his fireman's remedy for a leaky coal spray pipe, but was sure he did not mistake the main distant for the



Scene of the Slough collision of July 2, 1941

relief distant. His fireman could not say anything about the condition of the signals, nor could the guard.

Major Wilson conducted three tests with a representative train starting from the up main home signals, the mean speed at the diamond crossing being 19 m.p.h., and although Driver Hoskins may have made a slower start, his estimate of 4 m.p.h. was unreasonably low.

Inspecting Officer's Conclusions

From Driver Clay's evidence and other circumstances, and basing his conclusions on certain calculations, Major Wilson is convinced that at the time when Signalman Welch reversed the crossover the freight train was just over 1,070 yd. from his box and may even have been more, as the Plymouth train may have started more slowly than the tests indicated and the speed of the freight at the time of the collision may have been appreciably higher than 15 m.p.h. Welch's suggestion that he made a "serious mistake" in assuming the freight train had come to a stand is clearly false. That train could not even have been in sight when Welch reversed the crossover. It must be assumed that in his anxiety to avoid further delay to the express, he allowed it to start across, assuming without justification that the freight would stop, thus acting in direct contravention of block telegraph regulation 4(c). A man of 42, 15 years a signalman and 3½ years at Dolphin Junction, he has a clear record; his work at this box has so far justified the opinion that he was a capable signalman. Major Wilson can find no excuse for his failure. On this occasion his confusion, which apparently

resulted from a comparatively trivial mistake, that of not diverting the stores train to the relief line and leaving the main line clear for the express, led to a complete disregard of safety. It appears that, in spite of his record hitherto, he is temperamentally unfitted for the responsible duties of a signalman, at any rate in a busy main line junction box.

The extent of Driver Clay's responsibility depends on whether the down relief distant was at clear or not. His statement that it was given in good faith, but he may have confused it momentarily with the down main distant, while his attention was diverted by the leaking pipe, and the latter signal may not have been replaced promptly behind the freight train that passed Dolphin at about 2.53 a.m. It was also the first signal of the two to come into view round a right hand curve, while Clay did not keep the distant in view very long before he crossed to the fireman's side. Welch's evidence was shown to be unreliable in other important respects, and Major Wilson finds some difficulty in accepting his statement that he did not lower any signals when the freight was accepted by Signalman Woodhouse at Slough East at 2.46 a.m. Indeed it would be natural to do so. He suggested he offered the train then to save time, but it is not clear that any, beyond a few seconds, would have been saved. His responsibility for the accident is established, whether he reversed any signals or not. He could have done so, and Major Wilson thinks it fair to give Driver Clay the benefit of the doubt.

There are no track circuits at this junction, but Major Wilson is satisfied that, with reasonable care, there should be no

difficulty, even on a dark night, in making sure that a train has stopped at the down relief home signals. Some care is, however, necessary, as an approaching train is seen almost end-on; observation from the middle of the frame, where Welch said he was standing, is insufficient. The down relief home signals can be seen from the footplate for only about 400 yd. or less through the arch of the brick overbridge, and their small centre-pivoted arms are far from conspicuous in daylight. The short range of view contributed indirectly to the collision, and the company should be asked to consider the possibility of its improvement.

The general subject of "point protection" at twin facing crossovers where there are two pairs of up and down lines is debatable. In this case the two parallel crossovers are free of each other and the accident would no doubt have been averted if the interlocking had required the relief facing end to be reversed to act as a trap, as a preliminary to the diversion of the Plymouth train; but this would involve risk to down main traffic in the event of a relief line train overrunning. Practice in this respect varies, and equally strong arguments can be put forward for leaving the relevant points either free of each other, or interlocked.

It has been suggested that this accident would have been prevented if the freight engine had been fitted with A.T.C. apparatus; but in view of the doubt as to the aspect of the distant signal concerned, there can be no certainty on this point. A driver's duty is to observe and obey visual signals, and Clay's expressed view that he regarded A.T.C. as a reminder in this respect is the correct one.

Questions in Parliament

Below are summarised Answers to Questions in Parliament affecting transport. The Minister concerned and the date of the Answer are given in parentheses.

Transport of Bricks

As from December 1 no bricks will be accepted for transport by the railways to a destination over 75 miles distant from the departure station, unless a certificate is obtained from a Government transportation officer that it is essential that the bricks should be transported a longer distance. (Colonel J. J. Llewellyn, Parliamentary Secretary, Ministry of War Transport, November 19.)

First Class Accommodation

Additional fares are demanded only of those holders of third class tickets who travel first class when there is third class accommodation available on the train. As the effect of curtailing train services will be that all seating accommodation will be fully used there would be no advantage in the withdrawal of first class accommodation on all trains. (Colonel Llewellyn, November 19.)

Railway Executive Committee

Under the general direction of the Ministry of War Transport the Railway Executive Committee directs and co-ordinates the day-to-day working of the railways. The Chairman of the Railway Executive Committee also holds the office of Controller of Railways in the Ministry of War Transport. No salaries are paid to the members of the Executive Committee as such. It is not thought necessary to take

any special steps to see that railway by-laws prohibiting smoking in non-smoking carriages are more strictly enforced. (Colonel Llewellyn, November 19.)

Night Driving of Commercial Vehicles

The cessation of the night driving of commercial goods vehicles would be seriously detrimental to the war effort. The Ministry of Food is making arrangements for supplies of food to be available at road side eating houses to enable the provision of meals for travelling transport workers. (Colonel Llewellyn, November 19.)

Workers' Travel Problems

Where it appears that staggering of hours is desirable to facilitate travel for workers transferred long distances from their homes it would be the business of the Regional Transport Commissioner to see if they could be secured by a voluntary agreement between workers and managements. Where agreement is not reached the Ministry of Labour and National Service will have the benefit of the assistance of the appropriate Regional Board of the Production Executive and its advice as to the need for exercising compulsion. (Mr. Ernest Bevin, Minister of Labour & National Service, November 20.)

Railway Reconstruction in Persia

The Trans-Persian Railway has been completed only recently, and is therefore unlikely to require reconstruction on a large scale. An United States mission has now arrived in Persia to examine how United States aid to our war effort in that area can best be provided. The improvement of communications in Persia will naturally be one of the questions which the mission will

consider. (Mr. R. K. Law, Under Secretary of State for Foreign Affairs, November 20.)

IRISH RAIL & ROAD WORKERS UNION.—In the action brought by the Irish Rail & Road Workers Union, against the Great Southern Railways Company, the N.U.R., the A.S.L.E.F., and the R.C.A., Mr. Justice Gavan Duffy granted on November 18 a declaration asked for by the plaintiff union that it was one of the trade unions between which and the railway company the rates of pay, hours of duty, or other conditions of service ought to be regulated in accordance with agreements under Section 55, subsection 1 of the Railways Act, 1924. Otherwise, he did not know of any method whereby a court of law could interfere with the legislation now in force. The three other unions were dismissed from the action and allowed their costs. Costs were allowed to the plaintiff union up to the date of the filing of the company's defence, and after that to the company.

Forthcoming Meetings

Dec. 3 (Wed.).—**Barsi Light Railway Co. Ltd.** (Ordinary general), Winchester House, E.C., at 11.30 a.m.

Dec. 3 (Wed.).—**Cordoba Central Trust Limited** (Ordinary general), River Plate House, E.C., at 2.15 p.m.

Dec. 4 (Thurs.).—**Entre Rios Railways Co. Ltd.** (Ordinary general), River Plate House, E.C., at 2.15 p.m.

Dec. 4 (Thurs.).—**Argentine North Eastern Railway Co. Ltd.** (Ordinary general), River Plate House, E.C., at 2.30 p.m.

RAILWAY AND OTHER MEETINGS

The Central Argentine Railway Limited

The ordinary general meeting of the Central Argentine Railway Limited was held at Winchester House, Old Broad Street, London, E.C., on November 20. Mr. W. Howard-Williams, C.B.E., chairman of the company, presided.

The Secretary, Mr. A. S. Matthews, having read the notice convening the meeting and the auditors' report,

The Chairman said that the financial year 1940/41 might be described as the most disappointing in the history of the company. In contrast to the three preceding years, there had been abundant harvests; all prospects of their disposal abroad had disappeared as the result of factors arising from the war, and the gross receipts, already low in the previous year, had shrunk to below £8,000,000, a reduction of some £477,000 which, accompanied by a continuing rise in the price of materials, had made net receipts the lowest on record.

At the meeting in December last year he had suggested that since the Argentine Government was buying all the wheat and linseed offered at fixed prices, some revival in traffic receipts might be expected in January. In every week since the middle of January, the receipts had been greater than in the corresponding week of the previous year. The disastrous results of the first half of the period under review, which had shown decreased receipt to the extent of over £1,000,000 had been considerably mitigated; this figure had fallen by the end of the financial year to a sum which was vastly better than at one time might have been expected.

Lower Receipts from Maize

The wheat and linseed in the company's zone had by now been carried almost in their entirety to the ports and a considerable portion had left the country. The position as to maize, of which the railway transported half the country's exports, was sadly different. The large stocks remaining from the bumper crop of 1940, succeeded by a similarly abundant crop for 1941, under normal conditions of export would have yielded over £2,000,000 of revenue. Instead of that, receipts from maize had been but £381,000, by far the lowest for many years, and £1,000,000 less than the average annual receipts from maize over the preceding five years.

The Argentine Government had taken energetic measures to mitigate the depression resulting from the unsaleable grain surpluses and low market prices. Wheat, maize, and linseed crops had been taken over at fixed prices; and subsidies had been granted to cotton, sunflower seed, barley, and cattle. Nevertheless, the poor prices obtained for their produce and the increased cost of supplies had led to impoverishment among agriculturists, to the detriment of general goods and passenger traffics.

In expenditure there had been a rise of £118,000, but taking into account the contributions made to renewal funds of £192,000, this had been converted into a saving of £74,000. Fuel alone had cost £472,000 more. War exigencies had reduced the quantity of coal which it had been possible to obtain in Great Britain to about 25 per cent. of the normal quantity, and the deficiency had had to be made up by the use of alternative fuels—firewood, fuel oil, South and North American coal, and lastly maize. The bulk of the shortage had been met with wood, and the Forres branch had proved of inestimable value in

giving access to the plentiful supplies in the Province of Santiago del Estero, without which the fuel problem would have been well-nigh insoluble. Some 58 locomotives had been converted to burning oil, but this measure could not profitably be carried further at present, as the supply of fuel oil was also limited.

Use as Fuel

When the Argentine Government had been confronted with the impossibility of disposing of its surplus of maize in the normal way, it had inaugurated a campaign to procure its consumption in the largest possible quantities in the country. When the railways had been approached, they, as ever, had been willing to assist to the best of their ability, and put in hand tests to discover to what practical and economical lengths such assistance could go. It had been ascertained ultimately that, while it was impracticable to burn maize on passenger and fast goods trains, on other goods trains it could be usefully employed when mixed with coal in the proportion of 60 to 40. This was being done. Moderately satisfactory results were being obtained from all these alternative fuels; but from all these experiments with new fuels, it became increasingly clear that, for the company's purposes, coal from South Wales was pre-eminent.

Dealing with the effects of the war on Argentina the chairman said that there was no doubt that her trade had been and was being sadly disrupted. Due to the loss of European markets, only partially redeemed by increased purchases of such commodities as hides, wool, and linseed by the United States, her exports had been gravely reduced; perhaps the most serious factors had been the complete loss of the former markets for her maize in the stock raising countries of Europe, such as Denmark and Holland, and the shortage of shipping to carry her products to the few countries that were still in a position to take them. So long as the war continued it was difficult to see how any substantial change in present conditions could take place. A faint ray of sunshine might perhaps be seen in Argentina's recent decision to take over Axis shipping lying in her ports, which might result in the disposal of at least a portion of her surplus stocks, and also by the agreement between Argentina and the United States, providing for a mutual reduction of tariffs, which might be expected to lead to increased movement.

Need for Concessions by Government

The representatives of the railways had never ceased their efforts to obtain consideration from the Government of the parlous situation of the companies. They had pressed for authorisation for an increase in rates, for greater elasticity in wage agreements, for the easing of working regulations. The Government had appointed a special committee to make a comprehensive study of the railways' financial situation, and the report had now been published. It contained proposals relating to the companies' technical and commercial practices, and to general working and economic aspects, but no specific recommendation for immediate relief on the points raised by the companies.

The long drawn out negotiations for easing the burden placed upon them by the obligation to grant a 50 per cent. reduction to Government traffic conveyed

over the lines still continued. The committee appointed under the Law for the Co-ordination of Transport was still, five years after the sanction of the law, in the preliminary stages only of its task, and little benefit had accrued from it. A new difficulty had now been encountered in the efforts to reduce expenditure, by the Government's recent prohibition of retirements on pension, pending consideration by Congress of amendments to the Railway Pension Law. The railway might be described as living from hand to mouth. The track, rolling stock, and equipment in general was being kept up to the extent which finances permitted; but starvation was a gradual process; he emphasised that, without more effective treatment from the Argentine Government, under-nourishment would shortly begin to make itself felt. The farmers were receiving subsidies; but in spite of the efforts of the railways' representatives to convince the Government that, in the disposal of the harvest, transport was a no less important factor than production, the railways, far from being granted a subsidy, were mulcted in what was in fact, if not in law, a tax, in having to pay \$15, or \$16, for the exchange which the Government itself obtained for \$13.50.

Position after the War

He had no wish, nor indeed any qualifications, to prophesy as to the course of events after the war; but it seemed certain to him that, with millions hungry in Europe, means would be found to transport food to them from the great granary that was Argentina. If that country wished to retain her place in the sun, she had to realise before it was too late how essential it was that the railway industry should be in a proper state efficiently to meet the heavy demands that would surely be made on it. The company would play its part. It could rely on the full support of its staff and he was glad to record, in this connection, that the General Manager stated that the relations with the men had been satisfactory, and that the all-round co-operation manifest by them had minimised considerably the difficult working conditions. This made pleasant hearing, especially as the Presidential award of October, 1934, was still in operation and was responsible for a substantial cut from all wages and salaries. Moreover, the non-British staff had contributed voluntarily towards war charities \$88,000. This remarkable and spontaneous generosity was a striking indication of the loyalty of the employees to the railway, and of the good feeling existing between them and the management. He felt he was expressing shareholders' thoughts when he said that both as shareholders and as Britons, they owed a considerable debt of gratitude to the staff.

The report and accounts were unanimously adopted. The retiring directors were re-elected and the auditors re-appointed, and the proceedings closed with a vote of thanks to the Chairman, directors, and staff in England and Argentina.

ELECTRICAL COMPANIES MERGER.—The terms of the conditional agreement for the purchase by Crompton Parkinson Limited of the whole of the issued shares of Young Accumulator Co. Ltd. were given at page 426 of THE RAILWAY GAZETTE for October 24 last. It is now officially announced that the terms of the merger have been duly ratified by shareholders of the Young Company and of Associated Electric Vehicle Manufacturers Limited, its subsidiary, and that the merger contracts have, therefore, become absolute.

Notes and News

London Transport T.F.A. Stock.—London Transport points out that the 4½ per cent. T.F.A. stock 1942-72 is optionally redeemable from July 1, 1942, on three months' notice, and not from January 1, 1942.

Wagons for the Middle East.—In connection with the wagons for the Middle East described in last week's issue, the Great Western Railway supplied the following material: 1,300 brake levers, 500 three-link couplings, and 100 bearings for axle boxes.

Exceptional Rates in Eire.—The Court of the Railway Tribunal sat at the Four Courts, Dublin, on November 27, at 11 a.m. to consider an application by the Great Southern Railways Company for consent to new exceptional rates exceeding 40 per cent. below the standard rates.

C.N.R. Purchases.—Mr. R. C. Vaughan, President of the Canadian National Railways, said in an interview in Winnipeg recently that the company's purchases for the current year probably would amount to \$100,000,000. The company's general expansion includes new yards, new shops, extended sidings, and new equipment.

Eastern Bengal Railway Annuities.—In accordance with the provisions of the Act 47 & 48 Vic. cap. cciv, it is notified that on September 30, 1941, a total sum of £949,825 4s. 1d. was invested for the purpose of providing a sinking fund in respect of Eastern Bengal Railway Annuities, Class "B."

East Indian Railway Annuities.—It is notified that on September 30, 1941, a total sum of £8,281,339 was invested for the purpose of providing a sinking fund in respect of East Indian Railway Annuities Class "B"; a total sum of £1,857,911 for providing a sinking fund in respect of Class "C" annuities; and a total sum of £3,543,543 for providing a sinking fund in respect of Class "D" annuities.

Great Southern Railways (Eire).—For the 45th week of 1941 the Great Southern Railways Company reports passenger receipts of £34,955 (against £29,097), and goods receipts of £77,953 (against £62,937), making a total of £112,908, against £92,034 for the corresponding period of the previous year. The aggregate receipts to date are passenger £1,801,501 (against £1,597,219), goods £2,431,336 (against £2,163,769), making a total of £4,232,837 (against £3,760,988).

Italian Electrification.—Reports from Italy indicate that electrification of the Bologna-Trento section has been completed, thus giving an all-electric route between the Brenner pass in the north and Reggio Calabria in the south. It is probable that this conversion has been made on the 3,000-volt d.c. system to link up directly with the lines south of Bologna, but the Trento-Bolzano-Brennero line was operating on the old standard Italian three-phase system when war began.

Blackpool & Fleetwood Tramroad.—The Minister of War Transport has made the Blackpool & Fleetwood Tramroad (Extension of Time) Order, 1941 (S.R. & O., 1941, No. 1759) extending by three years the time limited by Section 16 of the Blackpool Improvement Act, 1919, for the giving of notice by Fleetwood Corporation to Blackpool Corporation of its

intention to promote a Bill to authorise the Fleetwood Corporation to purchase and work or lease that part of the tramroad authorised by Section 6 of the Blackpool & Fleetwood Tramroad Act, 1896, which is situated in the borough of Fleetwood.

New Rolling Stock for Denmark.—The Danish Parliament has voted an expenditure of 6 million Kroner for the purchase by the State Railways of 300 open goods wagons.

Dorman, Long & Co. Ltd.—As certain matters must be settled with Government departments it will not be possible for the report and accounts for the year to September 30, 1941, to be completed before the end of the year.

South African Railways Revenue.—Revenue earned by the South African Railways reached £4,000,000 during September, breaking all records, Mr. F. C. Sturrock, Minister for Railways, has announced. The gross surplus for the six months ending September 30 was also £4,000,000.

Companies Leaving Register.—Among the companies of which notice is given in *The London Gazette* of November 18 that at the expiration of three months the names will, unless cause is shown to the contrary, be struck off the register, are British Palestine & Eastern Tours Limited, Speed Lines Limited, and Traveller Saloon Coaches Limited.

U.S. Revenue Freight.—Statistics issued by the American Railway Institute show that loadings of revenue freight for the week ended November 7 totalled 873,600 wagons. This represents a decrease of 21,100 wagons on the previous week and an increase of 95,300 wagons on the similar week last year.

Orange Luxury Coaches (Portsmouth) Limited.—At an extraordinary general meeting of the company on September 24, a special resolution was passed to the effect that the company should be voluntarily wound up and that Mr. A. R. Baker, of 19, Fenchurch Street, London, E.C.3, should be appointed liquidator.

Bengal & North Western and Rohilkund & Kumaon Railways.—The India Office announced on November 20 acceptance of the recommendation of the Government of India to determine the contracts with the Bengal & North Western and the Rohilkund & Kumaon Railway Companies on December 31, 1942. On that date the two railways will be transferred to State management.

Salvage in Canada.—The Canadian National Salvage Office has sent out a new appeal to mines, quarries, railways, and all industries using ferrous metal equipment, asking them to release broken or obsolete machinery and tools as scrap for war purposes. Mr. William Knightley, Salvage Director, said a Quebec plant was making 25-pounder guns from reclaimed metals, and 500-lb. bomb casings are also being made from this material. On the west coast a manufacturer of diesel engines used a percentage of scrap for cylinder blocks.

Minimum Fares on Dublin Long-Distance Buses.—On Monday, November 10, minimum fares were introduced on 26 of the longer-distance services of the Dublin United Transport Company. The minimums—3d. or 4d.—apply at peak hours only—i.e., at mid-day, evening, and for the after-theatre rush. City services

are not affected. The new minimum fares are expected to lessen hardship to long-distance passengers.

Scottish Railway Stockholders.—The annual report of the Scottish Railway Stockholders' Protection Association (Scottish Branch of the British Railway Stockholders' Union), submitted at the meeting in Glasgow on November 26, states that under the new settlement between the Government and the boards, which can be justified only on patriotic grounds, the companies will not be entitled, as in the first settlement, to charge any part of war

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices	
			Nov. 21, 1941	Rise/ Fall
G.W.R.				
Cons. Ord.	52	22½	42½	+ 2½
5% Con. Pref.	103½	58	106½	+ 3
5% Red. Pref. (1950) ..	105	88	103	—
4% Deb.	107½	90½	112½	—
4½% Deb.	108½	96½	113	—
4½% Deb.	114½	96	118½	+ 1
5% Deb.	124	106	103	—
2½% Deb.	66½	57	68	+ 1
5% Rt. Charge	117½	97	128½	+ 1
5% Cons. Guar.	117	90½	126½	—
L.M.S.R.				
Ord.	24½	9	16½	+ 1
4% Pref. (1923)	60½	21½	50½	+ 2
4% Pref.	70½	35	65½	+ 2
5% Red. Pref. (1955) ..	94½	60	93½	+ 2
4% Deb.	101½	81	104½	—
5% Red. Deb. (1952) ..	109½	102	109½	—
4% Guar.	93½	65	98½	+ 2
L.N.E.R.				
5% Pref. Ord.	8½	1½	3½	+ ½
Def. Ord.	4½	1½	1½	—
4% First Pref.	60	20	50½	+ 3
4% Second Pref.	22½	6½	18	+ ½
5% Red. Pref. (1955) ..	80	34½	77½	+ 1
4% First Guar.	86½	56	89½	+ 1
4% Second Guar.	77½	37	79½	+ 2
3% Deb.	73½	54½	77½	—
4% Deb.	97½	74	103½	—
5% Red. Deb. (1947) ..	107	96½	103	—
4½% Sinking Fund Red. Deb.	104	98	102½	—
SOUTHERN				
Pref. Ord.	79	34	63½	+ 2
Def. Ord.	22½	7	14½	+ ½
5% Pref.	104½	58½	105½	+ 3
5% Red. Pref. (1964) ..	105	85	104½	—
5% Guar. Pref.	116½	90	126½	—
5% Red. Guar. Pref. (1957)	114½	94	113½	+ 1
4% Deb.	106½	84	110½	—
5% Deb.	122½	100	128½	+ 1
4% Red. Deb. (1962- 67)	106	96½	106	—
4% Red. Deb. (1970- 80)	106½	93	106	—
FORTH BRIDGE				
4% Deb.	95½	87	96½	—
4% Guar.	93½	81½	97½	—
L.P.T.B.				
4½% "A"	116	103	117½	—
5% "A"	121½	107	129	—
4½% "T.F.A."	105½	101	101½	—
5% "B"	116	102	116½	—
"C"	65½	24	41	—
MERSEY				
Ord.	26	18½	20½	—
4% Perp. Deb.	92½	84½	99½	—
3% Perp. Deb.	68	63	72½	—
3% Perp. Pref.	57	50½	56	—
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	13	- 1
G. SOUTHERN				
Ord.	12½	4	13	+ 3
Pref.	15½	6	17	+ 3
Guar.	36	15	35	+ 5
Deb.	55½	40	59	—

OFFICIAL NOTICES

Assistant Engineer (Civil)

REQUIRED for the Gold Coast Government Railway for two tours of 12-24 months with possible permanency. Salary £475 rising to £840 a year then, subject to promotion to a vacancy, to £1,000 a year. Free quarters and passages.

Candidates, aged 25 to 35, must be Corporate Members of the Institution of Civil Engineers or possess an engineering degree recognised as granting exemption from Sections A and B of the A.M.I.C.E. examination. They must have had practical experience on a British Railway and preference will be given to candidates who have also had practical experience in harbour maintenance.

Write, stating age and full particulars of qualifications and experience to the Ministry of Labour and National Service, Central Register Branch, Queen Anne's Chambers, Tothill Street, London, S.W.1, quoting E. 346.

Traffic Inspector

REQUIRED for the Nigerian Government Railway, for two tours of 12 to 24 months with possible permanency. Salary £400 rising to £560 a year. Outfit allowance £25. Free passages and quarters. Candidates, not over 38, must have received a good all round training on a Home Railway, both on inside and outside work, preferably in both operating and commercial departments. They should be capable of undertaking train operating, rolling stock distribution, claims, staff matters, general correspondence and the inspection, supervision and execution of general railway traffic working.

Write stating age and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/9767.

Universal Directory of Railway Officials and Railway Year Book

47th Annual Edition, 1941-42

Now ready

This unique publication gives the names of all the principal railway officers throughout the world together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD.
33, Tothill Street, Westminster, S.W.1

damage as working expenses. This settlement makes it more than ever imperative that the interests of the stockholders require to be carefully guarded, as they were by this association during the last war, in view of post-war settlement, when the railways will again be in the melting pot.

Italian Air Traffic.—According to official statistics recently released, Italian

	1938	
	Miles (Km.)	
Italian-operated system, length...	28,981 (46,669)	
Mileage flown	8,414,073 (13,549,233)	
Passengers carried	140,815	
	Lb. (Kg.)	
Mail conveyed	1,052,471 (478,396)	
Newspapers	658,368 (299,258)	
Baggage	4,597,875 (2,089,943)	
Freight	1,246,199 (566,454)	

air traffic in 1939 showed results far exceeding those attained in 1938. Comparative figures are given in the above table.

Railway Benevolent Institution.—A New Year's Day collection for the Railway Benevolent Institution will be made on January 1 at all railway stations in Great Britain and Ireland.

Railway Nationalisation in Turkey.—It is reported that the agreement for the purchase by the State of the Ilija-Palamutluk Railway has been signed. This railway, which is one of the few in Asiatic Turkey still in private ownership, taps an area of considerable mineral wealth.

G.I.P. Railway Annuities.—It is notified in accordance with the provisions of the Great India Peninsula Railway Purchase Act, 1900, that on November 1, 1941, a total sum of £24,048,632 was invested for the purpose of providing a sinking fund in respect of Class "B" Annuities.

New S.R. Portsmouth Area Halt.—A new Southern Railway halt known as Hilsa, between Frattan and Havant, was opened on November 2, and all electric trains other than the expresses, as well as stopping steam trains between Portsmouth and Southampton, call there. The electric running time between Portsmouth and Hilsa is 6 min.

Electrical Equipment Supply.—The Director of Industrial Electrical Equipment in the Ministry of Supply has set up an area organisation to give advice and assistance in war factories in matters arising out of damage by enemy action. Area advisory officers are located at Newcastle, Leeds, Leicester, Bedford, London (and South Eastern), and London (for Southern area).

The Glasgow Bus Strike.—Against the advice of the Transport & General Workers' Union, some employees of the

Glasgow Corporation Transport Department at Knightswood garage declared for a stoppage of work in protest against new duty schedules. Nearly 500 drivers and conductors went on strike on November 11, and, failing to obey an order to report for work, were dismissed. Then 1,000 men from other sections struck in sympathy on November 13, paralysing the municipal bus service. Army and R.A.F. coaches, with their Service drivers, were drafted into Glasgow that evening and operated a shuttle service in place of the corporation buses. This prompt and firm Government action resulted in a complete collapse of the strike. Most of the bus services were resumed on November 15, and the remainder (from Knightswood garage, where the strike originated) on November 17.

Road Accidents in October.—The return issued by the Minister of War Transport of the number of persons reported to have died or to have been injured as a result of road accidents during the month of October shows 856 deaths (compared with 1,013 in October, 1940), 4,361 seriously injured, and 13,249 slightly injured. Comparative figures for persons injured are not available for a year ago.

Railway and other Reports

Bengal-Nagpur Railway Co. Ltd.—The directors have declared from surplus profits a second interim dividend in respect of the year ended March 31, 1941, at the rate of 5s. per £100 ordinary stock, payable on January 1, 1942, making with the guaranteed interest of 1½ per cent. then due, a distribution of 2 per cent. actual, the same as a year ago.

Barsi Light Railway Co. Ltd.—Gross receipts for the year to March 31, 1941, were Rs. 22,48,936 (Rs. 16,94,283) and working expenses were Rs. 10,53,280, or 46.84 per cent. of gross earnings, against Rs. 10,32,297, or 60.93 per cent. Passengers numbered 1,239,325, an increase of 246,925, and the 187,983 tonnage of goods showed an improvement of 22,435 tons. Net earnings were £69,338 (£46,550). Sums of £16,000 (£2,500) and £4,351 (£2,914) are allocated respectively to tax reserve and renewals reserve, and ordinary dividends totalling 4½ per cent. (3½ per cent.) have been paid. The carry forward is £13,477 (£13,088).

Associated Equipment Co. Ltd.—The directors recommend a final dividend on

ordinary stock of 12d. per £1 unit of stock, free of income tax, making 18d. for the year ended September 30, 1941, which is equal to (approx.) 15 per cent. for the year, subject to tax at 10s. in the £. Net profits for the year (subject to final audit) were £132,500, against £196,500 for the previous year.

Grand Junction Company.—It has been decided by the directors to defer consideration of a dividend on the ordinary until the results for the year ending March 31, 1942, are known. No interim dividend was declared last year, but 2 per cent. was paid for the full year.

Butler Machine Tool Co. Ltd.—Net profit for the year to September 30, 1941, was £38,438 (£47,330). A first and final dividend is recommended of 12½ per cent., less tax, on the ordinary (same).

Chloride Electrical Storage Co. Ltd.—The usual interim dividend of 5 per cent. is being paid on "A" and "B" ordinary capital. The final for 1940-41 was 5 per cent., plus a bonus of 5 per cent., making 15 per cent. for the year.

Tanganyika Concessions Limited.—A dividend is recommended, payable on and after December 1, of 4 per cent., less tax, on the preference stock (being 4.8d. net per £1 unit of stock) for the year ended July 31, 1941. The accounts show receipts, including £47,000 tax reserve not required, of £69,716 (£25,141). After deducting expenses, fees, note interest, etc., and prospecting expenditure, the net profit is £25,660, which is added to reserve. For the previous year there was a loss of £24,722. The sum of £150,669 received from the Union Minière du Haut Katanga as an advance free of interest pending dividend has been put to suspense account.

Contracts and Tenders

Class I railways in the United States, on October 1, had 88,819 new freight wagons on order, the Association of American Railroads announces. On October 1 last year there were 19,892. The wagons on order this year included 57,891 box, 25,437 coal, 358 stock, 2,076 flat, 2,076 refrigerator, and 981 miscellaneous.

Class I railways on October 1 also had 671 new locomotives on order, of which 309 were steam and 362 electric and diesel-electric. On September 1, there were 611 new locomotives on order, of which 317 were steam and 294 were electric and diesel-electric. New locomotives on order on October 1, last year, totalled 215, which included 130 steam and 85 electric and diesel-electric.

Railway Stock Market

The war news encouraged improvement of business in most sections of the Stock Exchange, and there has been a strong and widespread advance in security values. The substantial gains recorded were in many instances due partly to the fact that stock has continued to be in short supply in the market. Moreover, at the time of writing the higher prices have induced very little profit-taking. British Funds and leading investment securities have been very firm, but the emphasis has been on industrial shares, which have reached their highest level since the war; buying has been based on yield considerations and on indications of willingness to take a long view. Home railway issues reflected the general trend very closely. Whereas the prior charges remained firm and fully maintained recent gains, buying centred on the junior securities, which have borne out the assumption that they were likely to respond strongly in the event of sustained improvement in conditions ruling in the stock and share market. As pointed out in these notes, the junior stocks offered yields which were in excess of those obtainable on other groups of equity and kindred securities; in view of the general tendency to lower yields, a similar position still exists. Moreover, there is growing realisation that there seem reasonable prospects of

dividends on the junior stocks being maintained for the current year. There have, of course, been no fresh developments in connection with the railways and the war damage question, but the view has gained ground in the market that the position under the war damage scheme for public utility concerns will be clarified in the near future. Moreover, it is assumed that the railway companies will follow a uniform course in dealing with war damage charges in their accounts. In fact, the disposition is to expect that dividends in future are likely to show little change unless, of course, war damage is on a very heavy scale.

Compared with a week ago, Great Western ordinary stock has moved up from 40 to 42½, and the 5 per cent. preference rose further from 105 to 107½, with the guaranteed stock fractionally higher at 127, and the debentures firm and unchanged at 112½. Among L.M.S.R. issues the ordinary stock was favoured, and has risen a point to 16½; the 1923 preference was three points better at 51½; and the senior preference gained two points to 66½. L.M.S.R. guaranteed has again moved better, and is 99, compared with 97 a week ago; the 4 per cent. debentures remained at 105. Among L.N.E.R. guaranteed stocks, the first improved a point to 89½, and at 79½ the seconds showed a similar gain on balance. L.N.E.R. first preference attracted in-

creased attention in view of the good yield, and was 51, compared with 47½ a week ago; there was speculative buying of the second preference, which improved from 17½ to 18½, at which the yield is still approximately 11 per cent. on last year's 2 per cent. dividend. Elsewhere, L.N.E.R. 4 per cent. and 3 per cent. debentures have remained at 103 and 78 respectively. Southern issues reflected the general trend, chief attention having attached to the junior issues. On balance, Southern preferred has moved up from 61½ to 64, and the deferred from 13½ to 14½. Southern 5 per cent. preference, 103 a week ago, has since moved better to 105½; the 4 per cent. debentures were again 111. Exceptionally, London Transport "C" at 41½ was slightly lower on balance; it is possible the £12,583,000 of 4½ per cent. T.F.A. stock may be converted to a lower interest basis next year.

Contrary to the general trend in evidence earlier in the week, there was less activity in Argentine and other foreign railway issues. The statements at the recent Central Argentine meeting had a depressing influence in some directions. Elsewhere, San Paulo lost part of its recent improvement. In the Indian section, Bengal North-Western and Rohilkunds were marked up on the Government purchase news. Canadian Pacific were inclined to ease.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1940-41	Week Ending	Traffic for Week			No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices			
			Total this year	Inc. or Dec. compared with 1940			Totals		Increase or Decrease		Highest 1940	Lowest 1940	Nov. 21, 1941	Yield % (See Notes)
							This Year	Last Year						
South & Central America														
Antofagasta (Chili) & Bolivia	834	16.11.41	£ 23,210	+ £ 1,580	46	£ 892,450	£ 779,320	+ £ 113,130	Ord. Stk.	11½	3½	10	Nil	
Argentine North Eastern ...	753	15.11.41	ps. 158,100	+ ps. 9,200	20	ps. 3,941,700	ps. 3,392,600	+ ps. 549,100	"	3½	1	3	Nil	
Bolivar ...	174	Oct., 1941	3,650	+ 470	43	38,504	39,150	- 646	6 p.c. Deb.	6½	5	7	Nil	
Brazil ...	...	...	...	...	...	...	...	...	Bonds	8	5	7½	Nil
Buenos Ayres & Pacific	2,801	8.11.41	ps. 1,340,000	+ ps. 235,000	19	ps. 24,320,000	ps. 21,209,000	+ ps. 3,111,000	Ord. Stk.	4½	1	7	Nil	
Buenos Ayres Great Southern	5,082	8.11.41	ps. 2,162,000	+ ps. 257,000	19	ps. 39,985,000	ps. 35,573,000	+ ps. 4,412,000	Ord. Stk.	10½	3	9½	Nil	
Buenos Ayres Western	1,930	8.11.41	ps. 821,000	+ ps. 167,000	19	ps. 15,598,000	ps. 12,060,000	+ ps. 3,538,000	"	8½	2	7½	Nil	
Central Argentine ...	3,700	15.11.41	ps. 1,557,200	+ ps. 240,450	20	ps. 36,433,900	ps. 27,697,550	+ ps. 8,736,350	"	8½	2	7½	Nil	
Do.	...	...	...	...	...	...	...	...	Dfd.	4	1	2½	Nil
Cent. Uruguay of M. Video	972	8.11.41	22,252	+ 1,054	19	422,362	366,541	+ 55,821	Ord. Stk.	3½	14	12	16½	
Costa Rica ...	188	Sept., 1941	21,437	+ 5,073	13	68,996	57,220	+ 11,776	Ord. Stk.	23½	99	97	6½	
Dorada ...	70	Oct., 1941	10,220	+ 1,480	43	122,970	122,400	+ 570	1 Mt. Db.	99	97½	97	6½	
Entre Rios ...	808	15.11.41	ps. 249,700	+ ps. 30,900	20	ps. 5,749,100	ps. 4,650,400	+ ps. 1,098,700	Ord. Stk.	4	1	6½	Nil	
Great Western of Brazil	1,016	15.11.41	15,300	+ 600	46	445,900	470,700	- 24,800	Ord. Sh.	4/-	1/-	7½	Nil	
International of Cl. Amer.	794	Sept., 1941	\$367,431	+ \$41,642	39	\$4,257,101	\$4,405,419	- \$148,318	"	9d.	9d.	1d.	Nil	
Interoceanic of Mexico	...	...	...	...	...	...	...	...	1st Pref.	9d.	9d.	1d.	Nil
La Guaira & Caracas...	22½	Oct., 1941	7,445	+ 650	43	65,445	67,095	- 1,650	"	6	4	4½	Nil	
Leopoldina ...	1,918	8.11.41	26,275	+ 1,212	45	1,185,324	1,035,169	+ 150,355	Ord. Stk.	2½	2½	4½	Nil	
Mexican ...	483	14.11.41	ps. 287,800	+ ps. 11,500	19	ps. 5,882,200	ps. 5,221,100	+ ps. 661,100	"	2/11½	1	1	Nil	
Midland of Uruguay	319	Sept., 1941	13,499	+ 1,530	13	40,979	33,560	+ 7,419	"	2½	1	3½	3½	
Nitrate	386	15.11.41	5,952	+ 2,274	45	128,796	154,899	- 26,103	Ord Sh.	2½	1	3½	3½	
Paraguay Central	274	15.11.41	\$3,411,000	+ \$500,000	20	\$66,948,000	\$68,351,000	- \$1,403,000	P.r. Lt. Stk.	41	36	42½	7½	
Peruvian Corporation	1,059	Oct., 1941	73,593	+ 6,715	17	292,346	265,325	+ 27,021	Pref.	4	1	6	Nil	
Salvador ...	100	Aug., 1941	c47,093	+ c11,877	9	c111,172	c86,683	+ c24,489	"	50	23	48½	4½	
San Paulo	153½	9.11.41	36,875	+ 478	45	1,659,000	1,633,067	+ 25,933	Ord. Stk.	15/11½	1	1	Nil	
Taitai	160	Oct., 1941	5,600	+ 3,005	17	21,990	9,320	+ 12,670	Ord. Sh.	15/11½	1	1	Nil	
United of Havana	1,346	15.11.41	17,761	+ 4,635	20	377,452	303,152	+ 74,300	Ord. Stk.	15/11½	1	1	Nil	
Uruguay Northern	73	Sept., 1941	1,219	+ 208	13	3,910	2,937	+ 973	"	15/11½	1	1	Nil	
Canada														
Canadian National ...	23,560	14.11.41	1,303,486	+ 312,520	45	52,444,121	42,287,773	+ 10,156,348	Perp. Dbs.	86	68	93½	4½	
Canadian Northern	...	...	...	...	...	...	...	...	4 p.c. Gr.	105½	95½	101½	3½
Grand Trunk	...	...	...	...	...	...	...	...	Ord. Stk.	9½	4½	12½	Nil
Canadian Pacific ...	17,146	14.11.41	971,600	+ 287,800	45	37,910,400	29,186,600	+ 8,723,800	"	99½	71	100	3	
India														
Assam Bengal...	1,329	10.9.41	3,105	+ 945	23	80,887	66,780	+ 14,107	Ord. Stk.	99½	71	100	3	
Baral Light	202	Oct., 1941	245,100	+ 27,943	14	2,552,246	2,417,662	+ 134,584	"	283	234	335	4½	
Bengal & North Western	2,099	10.7.41	222,300	+ 58,275	14	6,386,175	5,903,100	+ 483,075	"	96	83½	100½	4½	
Bengal-Nagpur	3,269	10.11.41	309,450	+ 28,943	23	3,278,286	2,691,099	+ 587,187	"	108	99	107½	5½	
Bombay, Baroda & Cl. India	2,986	10.9.41	193,425	+ 50,040	23	48,150	47,045	+ 1,105	"	104	97½	102½	7½	
Madras & Southern Mahratta	2,939	Oct., 1941	48,150	+ 1,105	4	48,150	47,045	+ 1,105	"	284	238	335	4½	
Rohilkund & Kumaon	546	10.8.41	136,398	+ 13,893	19	1,860,584	1,640,073	+ 220,511	"	93½	83	97½	4½	
South Indian	2,500	...	...	...	...	...	...	...	"	...	...	...	...
Various														
Beira ...	204	Aug., 1941	78,248	+ 2,864	18	805,794	82,025	+ 56,624	Prf. Sh.	7/10½	4	2	N	
Egyptian Delta	610	31.7.41	7,912	+ 2,864	18	805,794	82,025	+ 56,624	B. Deb.	53	44½	64	5½	
Manila	...	...	...	...	...	...	...	...	Inc. Deb.	88	80	89½	6½
Midland of W. Australia	277	May, 1941	17,591	+ 3,683	48	167,924	145,304	+ 22,620	"	...	...	...	...
Nigerian	1,900	30.8.41	38,550	+ 10,823	22	1,122,822	783,893	+ 338,929	"	...	...	...	...
Rhodesia	2,442	Aug., 1941	469,745	+ 63,377	26	5,152,045	17,463,590	+ 1,901,130	"	...	...	...	...
South Africa	13,291	27.9.41	788,722	+ 86,611	4	955,039	868,428	+ 86,611	"	...	...	...	...
Victoria	4,774	July, 1941	955,039	+ 86,611	4	955,039	868,428	+ 86,611	"	...	...	...	...

Note. Yields are based on the approximate current prices and are within a fraction of ½
† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffic is given in pesos